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Contents

Abstract

This study examines the impact of capital controls using monthly information to construct higher-frequency, quarterly indexes for Malaysia during the period 2000–2008 and Thailand over the period 2000–2010 in a vector auto-regression model. The results show that restrictions in Thailand have no significant effect on inflows but are especially effective for outflows, particularly foreign direct investment. In Malaysia, capital relaxation tends to have a significant impact on inward foreign direct investment and portfolio inflows. Changes in capital account policies do not have a significant impact on the real exchange rate in Malaysia and Thailand.

I. Introduction

Policy makers in Asia have remained reluctant to completely do away with capital controls despite pursuing an overall strategy of economic liberalization since the early 1990s. Unabated and large capital inflows tend to create asset bubbles in the nontradeables sector, to suddenly stop or reverse, and to cause financial turmoil given shallow and underdeveloped domestic capital markets in emerging countries. Many concerns relate to large capital inflows causing real domestic currency appreciation, rendering exports uncompetitive.

Beginning 2002, some countries in Asia had begun to re-employ capital control measures as foreign bank flows into Asia turned to net inflows from outflows, while both portfolio equity flows and carry trades accelerated and became more volatile and sensitive to developments in global equity markets. Global commodity and fuel prices rose dramatically as well beginning late 2006 until about the second quarter of 2008. Policy makers became concerned with both adverse supply-side conditions and renewed inflationary pressures. The recent return of large capital flows to countries in Asia, given Asia's strong recovery from the global financial crisis and near-zero interest rates in Europe and the United States (US), has induced some countries in the region to utilize various forms of capital controls once again.

Capital controls are seen as giving policy makers an extra degree of freedom to moderate the volume and composition of capital flows. They could increase the policy space for using expansionary monetary and fiscal policy to boost an economy without worsening the external balance, reducing the prospects of destabilizing capital outflows especially during periods of political instability.[1] However, the macro context in which such controls have been imposed by countries have differed and the effects of capital controls are difficult to disentangle from those of other policies.

The evidence regarding the effectiveness of capital controls is mixed. In the 1990s, capital controls were only temporarily able to drive a wedge between foreign and domestic interest rates and to reduce pressures on the exchange rate in countries such as Brazil, Chile, Colombia, Malaysia, and Thailand (Ariyoshi et al. 2000). Furthermore, these countries were unable to maintain interest rate differentials between foreign

[1] As Perkins and Woo (2000) point out, in Malaysia, the fear was that the political struggle between Mahathir and Anwar would result in capital flight and a collapse of the ringgit and the Malaysian stock market as had happened in Indonesia in May 1998 right before Soeharto stepped down. Malaysia imposed capital controls the day before Anwar was fired by Mahathir.

and domestic interest rates and reduce exchange rate pressures simultaneously. Nevertheless, Malaysia and Thailand experienced less significant appreciations compared with the other countries that used capital controls, and were able reduce the amount of short-term inflows while lengthening maturities.

The apparent success of Malaysia in using capital controls during the Asian financial crisis of 1997–1998 resurrected interest in their use in the postcrisis period when many countries in Asia experienced both large capital inflows and currency appreciation. In December 2006, as the baht (B) appreciated in the face of strong capital inflows, Thailand imposed Chilean-style capital restrictions in the form of an unremunerated reserve requirement (URR) of a withholding tax of 30% on purchases of foreign currency exchanged for baht. In contrast with Malaysia's experience, the policy seems to have met with less success. There was an immediate and large decline in the stock market index when the policy was announced; appreciation pressures on the baht continued unabated; and by 2008, the controls were lifted. Nevertheless, on 12 October 2010, in response once again to large capital inflows and appreciation pressures on the baht, Thailand announced a 15% witholding tax on capital gains and interest payments on government and state-owned company bonds. Malaysia, in contrast to Thailand and its own practice in the late 1990s, adopted capital account liberalization on both inflows and outflows in 2000–2010. Therefore, the cases of Malaysia and Thailand seem to provide interesting but contrasting experiences with the use of capital controls after the 1997 Asian financial crisis.

This study examines the effectiveness of capital controls in Malaysia and Thailand over the period 2000–2010 using a vector auto-regression (VAR) model. One of the key distinctions of our study is constructing *de jure* capital account restriction indexes as in Schindler (2009) and Binici et al. (2010) but using high-frequency information on a monthly basis, published by the central banks to construct quarterly indexes. Most previous studies use annual information from the Annual Report on Exchange Arrangement and Exchange Restrictions published by the International Monetary Fund (IMF) to construct capital restriction indexes. Using highly aggregated information may fail to adequately capture changes in the frequency of usage or degree of restrictiveness, and thus give misleading results as to the effectiveness of such controls. In addition, this study examines not only the effects of restrictions on the volume of capital flows (aggregate, inflows, and outflows), but also on particular asset categories of capital flows (portfolio, direct, and other investment flows).

The study is divided into the following sections. Section II describes capital account policies in Malaysia and Thailand in the post-Asian financial crisis period. Section III discusses the methodology used to construct the capital control indexes in Malaysia and Thailand in this study. Section IV discusses the VAR model used to assess the effectiveness of capital control measures in Malaysia and Thailand, while Section V presents the results. Section VI concludes. Briefly, the results show that restrictions in

Thailand have no significant effect on inflows but are especially effective for outflows, particularly of foreign direct investment (FDI). In Malaysia, capital restrictions tend to have a significant impact on inward FDI and portfolio inflows. Changes in capital account restrictions do not have a significant impact on the real exchange rate in both Malaysia and Thailand.

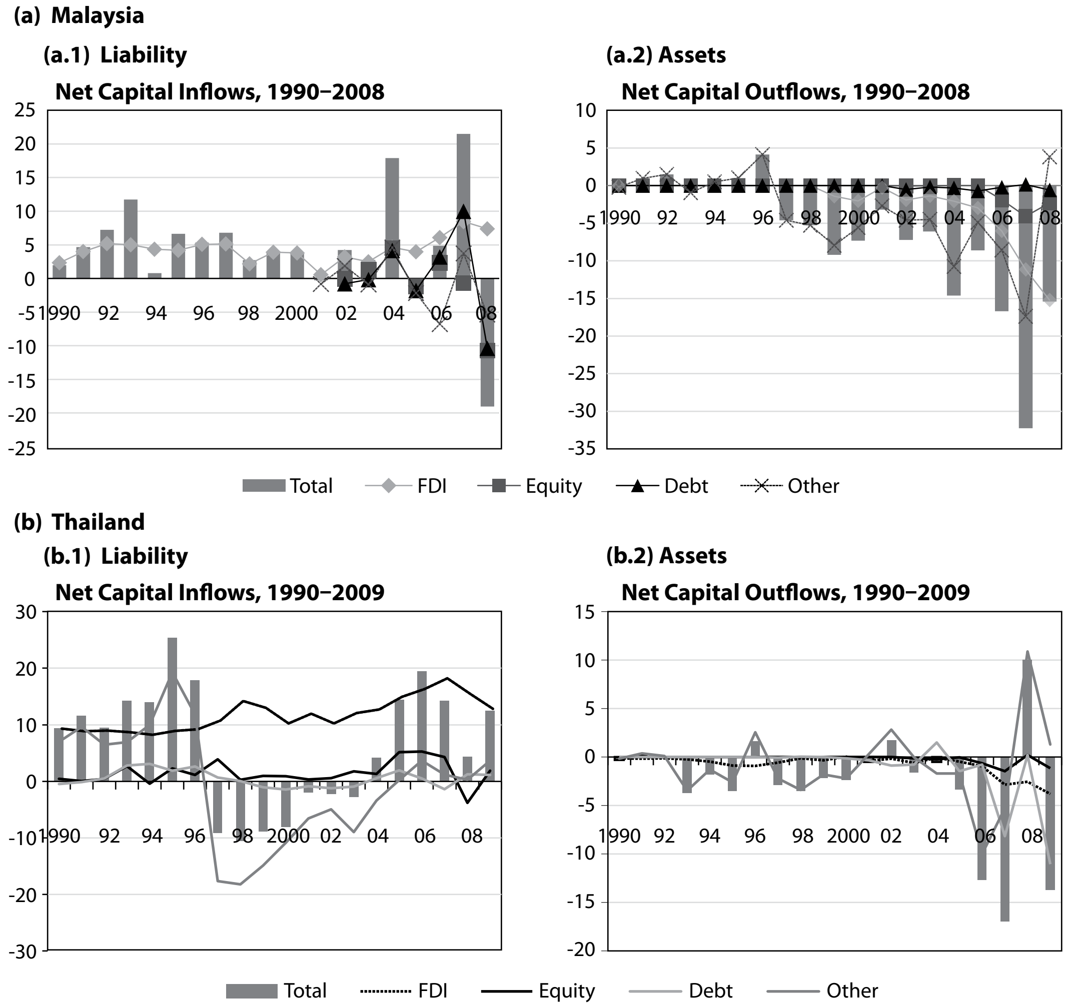
II. Capital Account Policies in Malaysia and Thailand

Malaysia and Thailand had contrasting capital account policies after the Asian financial crisis. Thailand introduced a number of capital restriction measures beginning 2003 to discourage net capital inflows and encourage net capital outflows. Malaysia, in contrast, introduced strict capital control measures during the Asian crisis, but has gradually lifted the restrictions since the early 2000s.

During the Asian financial crisis, capital reversal in Malaysia was far less than in other crisis-affected Asian countries (Figure 1:a.1). This may have resulted from the negative sentiment generated by the imposition of graduated exit levies on 15 February 1999. Net capital inflows dropped noticeably in 2001, mainly because of the sharp decline in FDI as a result of the collapse of the dotcom bubble. Net capital outflows (asset side) started to gather momentum during the 1997 crisis period and has continuously increased since then.

After the Asian financial crisis, the Malaysian central bank began to liberalize capital restrictions for all asset classes. Total net capital inflows improved in 2003–2004 as nonresidents invested in equities and bonds to speculate on the ringgit's appreciation. However, the ringgit appreciated only slightly and capital reversal was evident in all asset classes except FDI in 2005. Capital inflows started to rise again in 2006–2007 before declining sharply in 2008 in response to the current global financial crisis. Foong (2008) pointed out that during 2006–2007, there were some signs of speculative activity but the central bank did not impose any new capital restrictions to contain speculative capital inflows. The initial responses during that period included the sterilization of capital inflows, with Bank Negara accumulating large amounts of reserves while increasing domestic liquidity significantly by 50.9 B ringgit (RM) to RM298.6 billion in 2007 (Kuang 2008, 333). The prudential and regulatory framework was better aligned with international best practices because of fears of asset bubbles particularly in equity and property prices and in further strengthening of the domestic currency.

Figure 1: Capital Flows in Malaysia and Thailand, 1990–2009 ($ billion)



FDI = foreign direct investment.

Note: The negative sign is applied for capital outflows (i.e., assets). The higher the negative value, the greater the amount of net capital outflows.

Source: International Financial Statistics, available: www.imfstatistics.org/IMF/logon.aspx?ReturnUrl=%2fimf%2fimfbrowser.aspx%3fbranch%3dROOT&branch=ROOT, downloaded July 2010.

Restrictions on capital outflows were relaxed. Foreign exchange administration rules were liberalized so that individuals and corporations could invest more of their own funds abroad. Investing companies that had no domestic ringgit borrowing were freely allowed to invest their own funds abroad. Prudential limits were only prescribed on large investments abroad if domestic credit facilities were used. In April 2007, the limit on a bank's foreign currency net open position equivalent to 20% percent of a bank's capital base was abolished. This gave onshore banks greater flexibility to engage in the foreign currency business, allowing them to invest in all listed and unlisted shares and foreign equities. However, the limit for aggregate investments in shares and interest in shares was kept at 25% of a bank's capital base (Kuang 2008, 338).

The global financial crisis affected domestic investors in Malaysia only slightly and there was no sign of capital reversal in 2008 (Figure 1a.1). Most outward capital flows were in other investment flows and FDI while those in portfolio investment were negligible (Figure 1a.2). Foong (2008) argued that the key reason for the reluctance of domestic investors to invest abroad was possibly the lower returns abroad as well as a lack of requisite investment skills by domestic financial institutions, despite the Malaysian central bank's continuous liberalization of capital restrictions for domestic investors in all asset classes.

In Thailand, capital inflows started to gather momentum in 2003, reversing massive outflows experienced during the Asian financial crisis (Figure 1b.1). This was interrupted by the global financial crisis, which led to a slowdown in cross-border capital inflows in 2008. Nevertheless, the rapid economic recovery in Thailand has encouraged the resumption of large capital inflows since the second quarter of 2009, approximating that of 2007 levels. Alongside the increase in capital inflows from 2003 to 2007, net capital outflows also increased substantially in Thailand, reaching $17 billion in 2007 (Figure 1b.2).

The Bank of Thailand (BOT) worried about the appreciation of the baht from the influx of short-term capital inflows. The nominal exchange rate (baht per US dollar) began to appreciate beginning in 2001 with the influx of short-term capital into debt securities (Figure 2b). In 2003, the BOT announced a number of policy measures to relax restrictions on capital outflows, aiming to offer alternative investment opportunities abroad and promote Thai residents' investment in foreign countries. Nevertheless, there was a sudden increase in total outstanding nonresident baht accounts, from the normal level of B18 billion in 2000–2002 to B63 billion in October 2003. The BOT imposed capital restrictions for capital inflows and relaxed regulations for capital outflows originated by Thai residents.

The continuing appreciation of the baht led the BOT to impose additional measures to guard against possible economic instability in 2006. Nevertheless, the pressures did not abate, and in December 2006, Chilean-style capital restrictions were introduced. Financial institutions were asked to withhold from their customers 30% of foreign currencies purchased or exchanged against the baht as URR to be deposited with the BOT.[2]

The URR was eventually lifted in March 2008. Meanwhile, restrictions were imposed by the BOT to guard against speculative capital flows and a rapid appreciation of the baht. Other measures for relaxing capital outflows imposed since 2006 were also maintained in 2008–2010.

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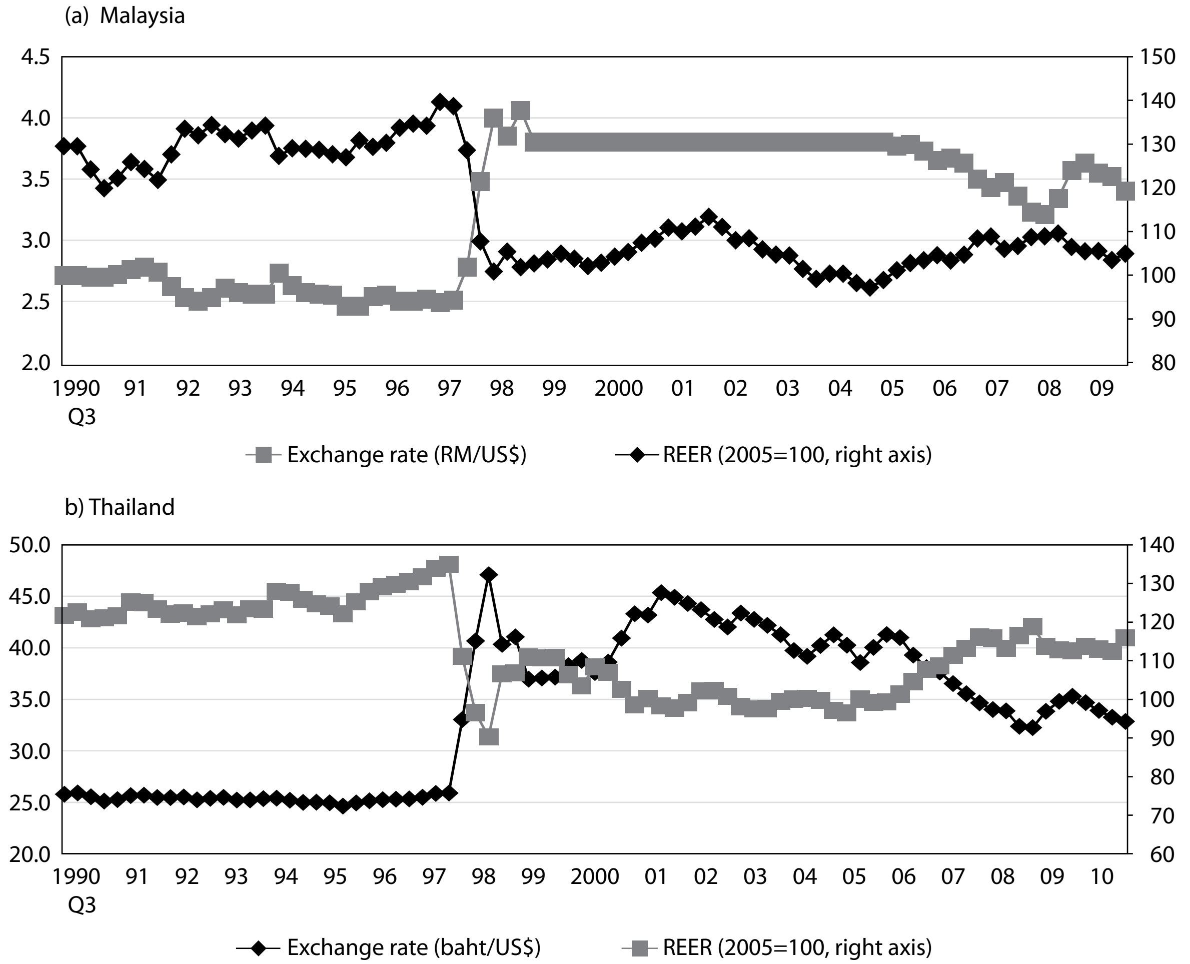
2 Except for foreign exchange transactions related to trade in goods and services and to repatriation of investment abroad by residents and FDI.

Figure 2: Exchange Rates in Malaysia and Thailand, 1990–2009



REER = real effective exchange rate.

Sources: International Financial Statistics, available: www.imfstatistics.org/IMF/logon.aspx?ReturnUrl=%2fimf%2fimfbrowser.aspx%3fbranch%3dROOT&branch=ROOT; and Bank of International Settlements, available: www.bis.org/statistics/index.htm, both downloaded July 2010.

III. Capital Control Indexes

Capital control indexes are constructed for Malaysia and Thailand.[3] To capture changes in capital restrictions within a year, capital restriction indexes are constructed based on the information from notifications, press releases, and speeches related to foreign exchange and the capital account published formally by the central banks.

Measures are first divided into two categories, namely, those affecting net capital inflows (liabilities) and those affecting net capital outflows (assets). Within these two categories,

[3] Most previous studies construct l capital restriction indexes. See for example, Schindler (2009), Ito and Chinn (Ito and Chinn 2005), Mody and Murshid (2005), Miniane (2004), Johnston and Tamirisa (1998), and Tamirisa (1999).

the flows are further disaggregated into four types: FDI, equity securities, debt securities, and other investment flows (including foreign currency holdings and nonresident baht accounts).[4]

The capital control indexes are constructed by assigning "+1" or "–1" to each announced measure. Any measure that relaxes inflows and facilitates outflows is assigned "+1", regardless of the source of the flows, whether residents or nonresidents. Any measure that restricts inflows as well as outflows is assigned "–1". The number is scaled by different weights based on direct and indirect impact criteria. The weight is set at between 0 and 2—the higher the weight, the more severe the measure, especially from the policy maker's point of view. For example, a measure designed to directly relax or block capital flows greater than $50 million is given a weight of "2"; if the flow is less than $5 million, the weight assigned is "0.5". In addition, a weight of "0.25–0.5" is given when the central bank changes the regulation slightly, and seeks the cooperation of or provides a particular option for investors, including financial institutions. The weight is increased to "1" when the central bank requests and/or requires investors or financial institutions to undertake certain measures. A weight of "2" is assigned when the central bank imposes a tax, the URR, a two-tier market, or lifts certain policy measures.

Once the number ("+1" or "–1") and weight have been assigned to every measure, the numbers are sequentially accumulated over time to arrive at the indexes for each asset class.[5] The indexes are re-scaled to lie between 0 and 1 to be able to compare them with Schindler (2009) so that "1" represents capital restrictions and "0" represents capital liberalization. The capital restriction indexes are constructed based on monthly information, and the simple average over 3 months is calculated to generate quarterly indexes.

Before the Asian financial crisis, capital restrictions for net capital inflows were eased substantially in Thailand, as shown by the decline in the index for total capital inflows (Figure 3c). This was largely due to the liberalization in financial institutions, while liberalization in other asset categories remained relatively limited. In the wake of the Asian financial crisis, however, the BOT reversed its policy. Capital restrictions were imposed on all asset types, except FDI, in 1997–1998, raising the indexes during the crisis period. Some of these restrictions remained in place until early 2000.

In Malaysia, capital control indexes rose during the Asian financial crisis (Figure 3a). On 1 September 1998, Malaysian authorities imposed new regulations to prevent the outflow of short-term capital and speculation on the ringgit. However, the degree of capital restrictions for net capital inflows during this period tended to be higher than that in Thailand, since in February 1999, the Malaysian central bank imposed graduated exit

4 A chronology of capital restriction and liberalization measures adopted in Malaysia and Thailand during 1990–2010 is given in Appendix 1.

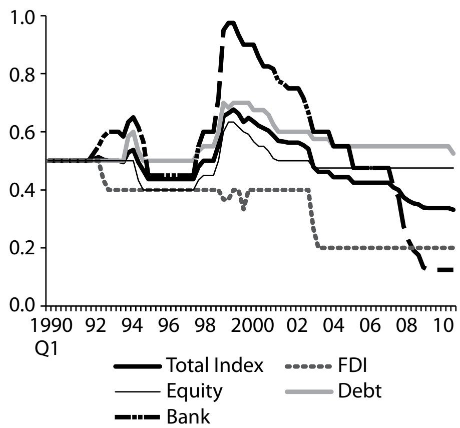
5 Note that to be able to compare the control indexes across the asset types, the maximum accumulation value of a particular asset type is used as a base for the index.

levies to discourage foreign investors to bring capital out of the country swiftly. Since then, the central bank has gradually liberalized the restrictions, e.g., the exit levy on profit repatriated after 1 year from the month the profits are realized was abolished and only portfolio profits repatriated within 1 year remained subject to the 10% levy. Capital control indexes for all asset classes, especially other investment (banking flows), have continuously declined as shown in Figures 3a and 3b.

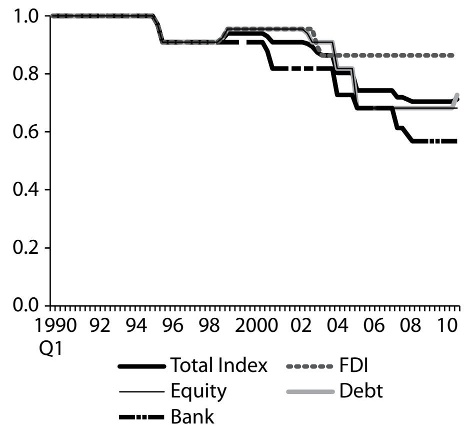
Figure 3: Capital Restriction Indexes by Asset Classes, 1990Q1–2010Q2

Malaysia

(a) Net Capital Inflows

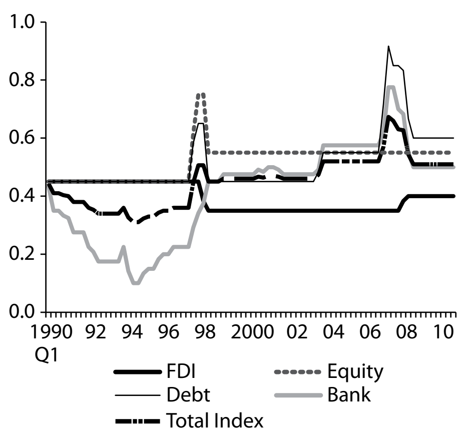


(b) Net Capital Outflows

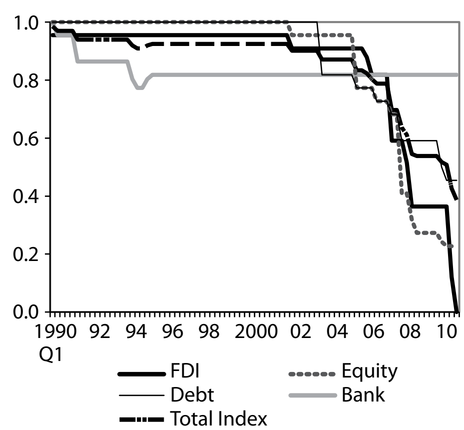


Thailand

(c) Net Capital Inflows



(d) Net Capital Outflows



FDI = foreign direct investment.

Note: The higher the index, the greater the degree of capital restrictions.

Source: Authors' calculation based on Schindler (2009).

Because of the continued influx of short-term capital into debt securities, as well as the noticeable appreciation of the baht in 2006, additional restrictive measures, including the URR, were introduced. These are reflected in the noticeable rise in capital restriction indexes in 2006, especially in terms of debt securities and financial institutions.

Controls on capital inflows were relaxed gradually in 2007 and eventually the URR was lifted in March 2008, leading to a decline in capital restriction indexes in 2007–2008. Nevertheless, certain restrictive measures imposed by the BOT were maintained, so that the capital restriction indexes during the last 3 years, especially for debt securities, have remained relatively high compared to those in early 2000 (Figures 3c and 3d).

Policy measures to relax restrictions on outflows, both of FDI and portfolio investment, were subsequently announced after 2003 in Thailand. In particular, exchange control regulations on investment in securities abroad were relaxed in 2006. The capital control indexes shown in Figure 3d point to the progressive relaxation of restrictions on capital outflows in terms of FDI, equity, and debt securities, offering investment opportunities abroad for Thai residents. In Malaysia, liberalization of net capital outflows occurred earlier (Figure 3b). In particular, other investment outflows have been gradually liberalized since the late 1990s, while other flows have shown noticeable liberalization in the early 2000s.

IV. Assessing Effectiveness of Capital Restrictions

To assess the effectiveness of capital restrictions, a VAR model is applied using quarterly data for 2000–2010.[6] The data before and during the Asian financial crisis (1990–1996 and 1997–1999) were excluded because of data limitations for Malaysia. For Thailand, the objectives of introducing policy measures during these two periods differ from those in 2000–2010. During 1990–1996, most measures were aimed at liberalizing capital and financial markets; during the crisis period, measures were targeted at stopping capital outflows; during 2000–2010, the measures were generally intended to control capital inflows.

Since the central banks introduced measures aimed not only at affecting capital inflows, but also at encouraging residents to invest overseas, the VAR model is applied separately to net capital inflows and net capital outflows. To clearly examine the effects of measures that restrict or relax capital flows, especially the switching effect, the model is applied not only to total capital flows, but also to the different assets classes, i.e., FDI, portfolio investment, and other investment flows (mainly bank flows). Note that in Thailand, for the liability side, since the central bank excluded equity security and FDI when imposing capital restrictions, net portfolio investment inflows were disaggregated into equity and

[6] Note that for Malaysia, because of data limitation on capital flows, the VAR model is performed during 2000–2008.

debt securities to clearly examine the effectiveness of capital restrictions, especially the switching effect that may occur among debt, equity, and bank inflows.[7] All in all, there are five endogenous variables in the VAR model.

(i) Capital flows

For the liability side, capital flows (seasonally adjusted) are divided into the following.

TIF = total net capital inflows (percent of gross domestic product [GDP])

IFDI = net foreign direct investment inflows (percent of GDP)

IPORT = net portfolio investment inflows (percent of GDP)

IEQUITY = net equity investment inflows (percent of GDP)

IDEBT = net debt security investment inflows (percent of GDP)

Iother = net other investment inflows (percent of GDP)

For the asset side, capital flows (seasonally adjusted) are divided as follows.

TOF = total net capital outflows (percent of GDP)

OFDI = outward foreign direct investment (percent of GDP)

OPORT = net portfolio outflows (percent of GDP)

Oother = net other investment outflows (percent of GDP)

Note that to be able to interpret the results easily, a positive sign is assigned to all asset types of capital outflows. A higher positive value implies a larger volume of capital outflows.

[7] Note that in a case of Malaysia, the results are not significantly different between debt and equity securities in response to capital relaxation.

(ii) Capital restriction indexes

TIFC = index of capital restrictions on the liability side (net capital inflows). The index ranges from 0 (liberalization) to 1 (maximum restriction)

TOFC = index of capital restrictions on the asset side (net capital outflows). The index ranges from 0 (relaxation) to 1 (maximum restriction)

(iii) Real exchange rate

REER = real effective exchange rate, constructed by the BOT (1994 = 100). An increase in the REER reflects an appreciation.[8]

(iv) Real interest rate differentials

RINTEREST = real interest rate differentials between the Thai policy rate and the US 3-month Treasury bill rate, adjusted using consumer price index (CPI) inflation.

(v) Manufacturing production index[9]

MPI = Manufacturing production index (2000 = 100)

Note that the VAR model also includes the real GDP of G3 countries as well as the share prices of industrialized countries as exogenous variables. Data on capital inflows and outflows are from the IMF International Financial Statistics. Interest rates, CPI, real GDP of G3 countries, and share prices are from the CEIC. The real effective exchange rate and manufacturing production index are from the BOT.

The Augmented Dickey-Fuller test is used to test the stationarity of the data. The selected lag length of the VAR model is based on the Akaike information criterion and sequential modified LR test statistic. The ordering of the variables is set by listing the policy variables last after the other key economic variables, i.e., capital flows, real exchange rate, manufacturing production index, policy rate, and capital restriction index. For example,

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8 The results when using the nominal exchange rate were similar to those using the REER but the diagnostic tests using the REER perform better.

9 Note that in a case of Thailand, the results when applying MPI or real GDP are not significantly different, but in the case of Malaysia, real GDP performs better, especially in terms of diagnostic tests. Thus, in Malaysia, real GDP (RGDP) is applied instead of MPI.

$$TIF_t = \sum_{i=1}^{n} \alpha_{1i} TIF_{t-i} + \sum_{i=1}^{n} \alpha_{2i} RER_{t-i} + \sum_{i=1}^{n} \alpha_{3i} MPI_{t-i} + \sum_{i=1}^{n} \alpha_{4i} RRINTEREST_{t-i}$$
$$+ \sum_{i=1}^{n} \alpha_{5i} TIFC_{t-i} + \sum_{i=1}^{n} \alpha_{6i} G3GDP_{t-i} + \sum_{i=1}^{n} \alpha_{7i} Share_{t-i} + \varepsilon_{1t}$$
$$RER_t = \sum_{i=1}^{n} \delta_{1i} TIF_{t-i} + \sum_{i=1}^{n} \delta_{2i} RER_{t-i} + \sum_{i=1}^{n} \delta_{3i} MPI_{t-i} + \sum_{i=1}^{n} \delta_{4i} RRINTEREST_{t-i}$$
$$+ \sum_{i=1}^{n} \delta_{5i} TIFC_{t-i} + \sum_{i=1}^{n} \delta_{6i} G3GDP_{t-i} + \sum_{i=1}^{n} \delta_{7i} Share_{t-i} + \varepsilon_{2t}$$
$$MPI_t = \sum_{i=1}^{n} \beta_{1i} TIF_{t-i} + \sum_{i=1}^{n} \beta_{2i} RER_{t-i} + \sum_{i=1}^{n} \beta_{3i} MPI_{t-i} + \sum_{i=1}^{n} \beta_{4i} RRINTEREST_{t-i}$$
$$+ \sum_{i=1}^{n} \beta_{5i} TIFC_{t-i} + \sum_{i=1}^{n} \beta_{6i} G3GDP_{t-i} + \sum_{i=1}^{n} \beta_{7i} Share_{t-i} + \varepsilon_{3t}$$
$$RINTEREST_t = \sum_{i=1}^{n} \gamma_{1i} TIF_{t-i} + \sum_{i=1}^{n} \gamma_{2i} RER_{t-i} + \sum_{i=1}^{n} \gamma_{3i} MPI_{t-i} + \sum_{i=1}^{n} \gamma_{4i} RRINTEREST_{t-i}$$
$$+ \sum_{i=1}^{n} \gamma_{5i} TIFC_{t-i} + \sum_{i=1}^{n} \gamma_{6i} G3GDP_{t-i} + \sum_{i=1}^{n} \gamma_{7i} Share_{t-i} + \varepsilon_{4t}$$
$$TIFC_t = \sum_{i=1}^{n} \phi_{1i} TIF_{t-i} + \sum_{i=1}^{n} \phi_{2i} RER_{t-i} + \sum_{i=1}^{n} \phi_{3i} MPI_{t-i} + \sum_{i=1}^{n} \phi_{4i} RRINTEREST_{t-i}$$
$$+ \sum_{i=1}^{n} \phi_{5i} TIFC_{t-i} + \sum_{i=1}^{n} \phi_{6i} G3GDP_{t-i} + \sum_{i=1}^{n} \phi_{7i} Share_{t-i} + \varepsilon_{5t}$$

The sensitivity of the model is tested by changing the order of the variables. Results show that the model is not significantly sensitive to the ordering of the variables.

V. Results

Figure 4 shows the impulse responses of key variables to a 1 standard deviation increase in capital restriction indexes for Malaysia and Thailand (see Tables 1a and 1b for the regression results of Malaysia, and Tables 2a and 2b for Thailand). The tightening (relaxation) of capital restrictions on the liabilities side in Malaysia tends to have a significantly negative (positive) impact on inward FDI and portfolio investment inflows, as reflected in the negative relationship between these flows (IFDI and IPORT) and capital control indexes (TIFC). The effect peaks in the second quarter for both types of inflows but the effects tend to last longer for FDI—10 quarters compared with six quarters for portfolio investment. It is plausible that after the Asian financial crisis, financial institutions became cautious about excessive use of bank-sourced inflows so that the responses of the flows to capital relaxation are relatively limited.

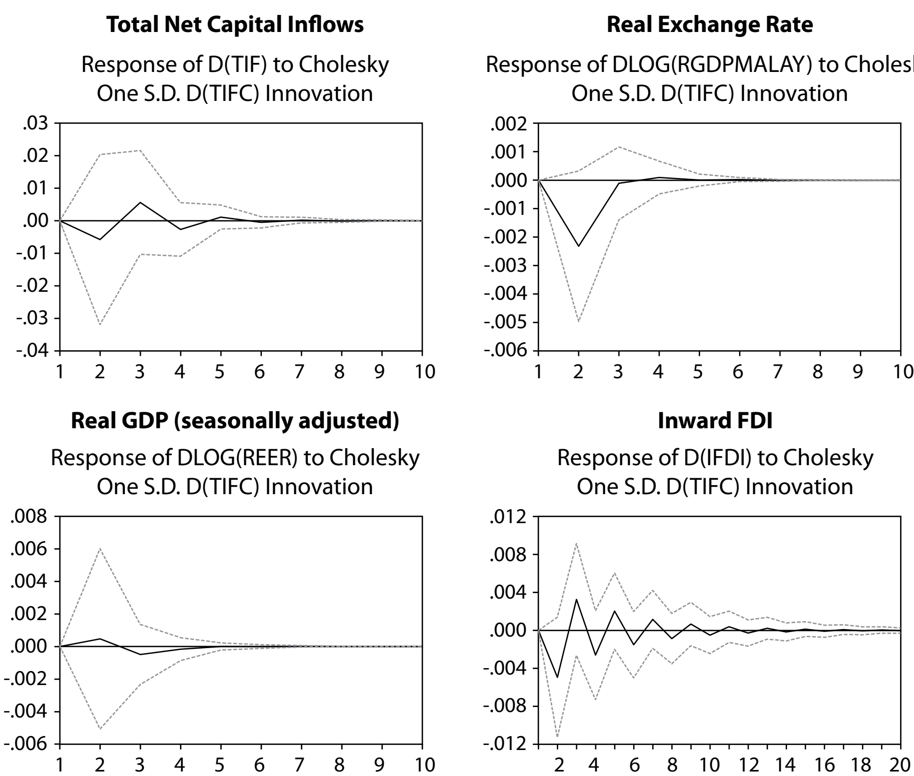
Meanwhile, there is no significant impact of changes in capital account policy on the real exchange rate. This could be a result of the exchange rate policy itself. Although the central bank moved toward managed floating exchange rate regime after 2006, changes in exchange rate so far have been limited and the central bank continued to influence movements in the exchange rate.

On the assets side, the relaxation of capital outflows tends to encourage outward FDI in Malaysia as shown by the negative impulse response in Figures 4a–4b (i.e., note that the lower the index, the greater the degree of capital relaxation).

In Thailand, on the liabilities side, the impulse response in Figures 4c–4d clearly shows an increase in total capital inflows, although it is statistically insignificant, after the imposition of capital restrictions. The impact peaks in the second quarter before dying down within six quarters. Composition switching tends to emerge from imposing such capital restrictions. The impulse response shows that equity inflows increase with the positive shock of capital restrictions, reach a peak in the second quarter, and gradually decline within five quarters. FDI inflows slightly increase but the impact is statistically insignificant. Because of the switching effect, appreciation of the exchange rate is evident, but statistically insignificant, in response to the imposition of certain types of capital inflows. Along with the appreciation of the real exchange rate, a negative relationship between capital restrictions and the MPI is found in this study (Appendix 2).

Figure 4: Impulse Responses of Key Variables to Capital Restriction

a. Malaysia: Impulse Responses to Capital Inflows Restriction



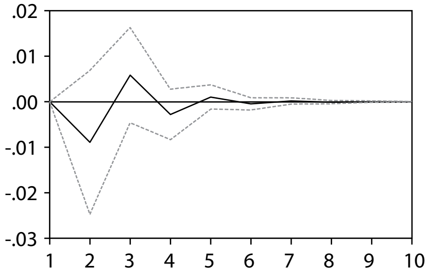
continued.

Figure 4: *continued.*

a. Malaysia: Impulse Responses to Capital Inflows Restriction: *continued.*

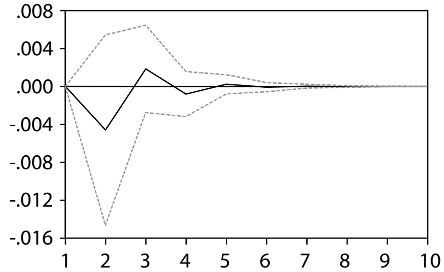
Net Portfolio Inflows

Response of D(IPORT) to Cholesky
One S.D. D(TIFC) Innovation



Other Investment

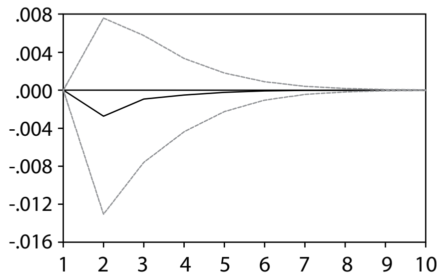
Response of D(lother) to Cholesky
One S.D. D(TIFC) Innovation



b. Malaysia: Impulse Responses to Capital Outflows Restriction

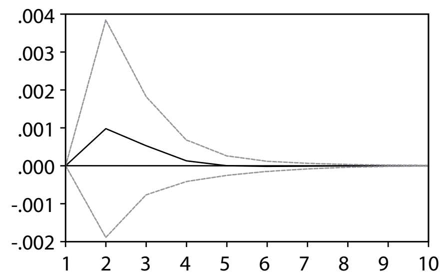
Total Net Capital Outflows

Response of TOF_A_SA to Cholesky
One S.D. D(TOFC) Innovation



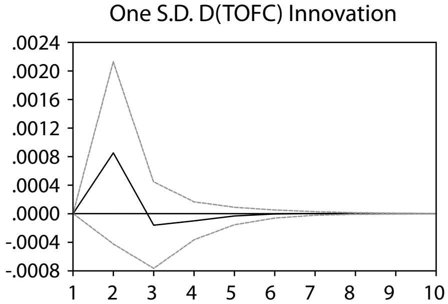
Real Exchange Rate

Response of DLOG(REER) to Cholesky
One S.D. D(TOFC) Innovation



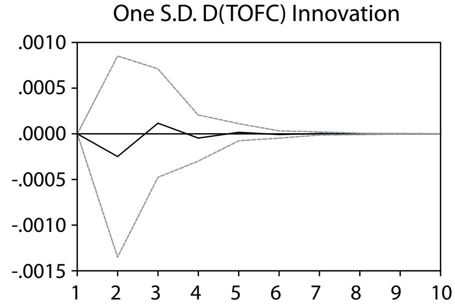
Real GDP (seasonally adjusted)

Response of DLOG(RGDPMALAY) to Cholesky
One S.D. D(TOFC) Innovation



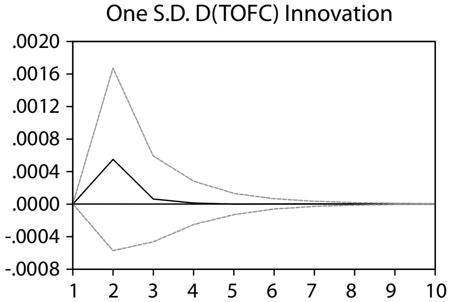
Outward FDI

Response of D(OFDI) to Cholesky
One S.D. D(TOFC) Innovation



Net Portfolio Outflows

Response of OPORT to Cholesky
One S.D. D(TOFC) Innovation



Other Investment

Response of Oother to Cholesky
One S.D. D(TOFC) Innovation

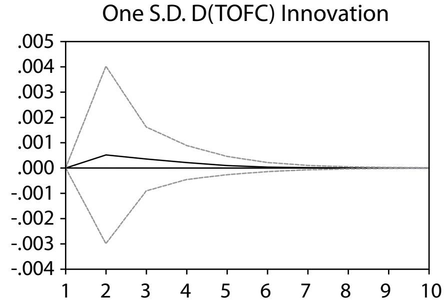
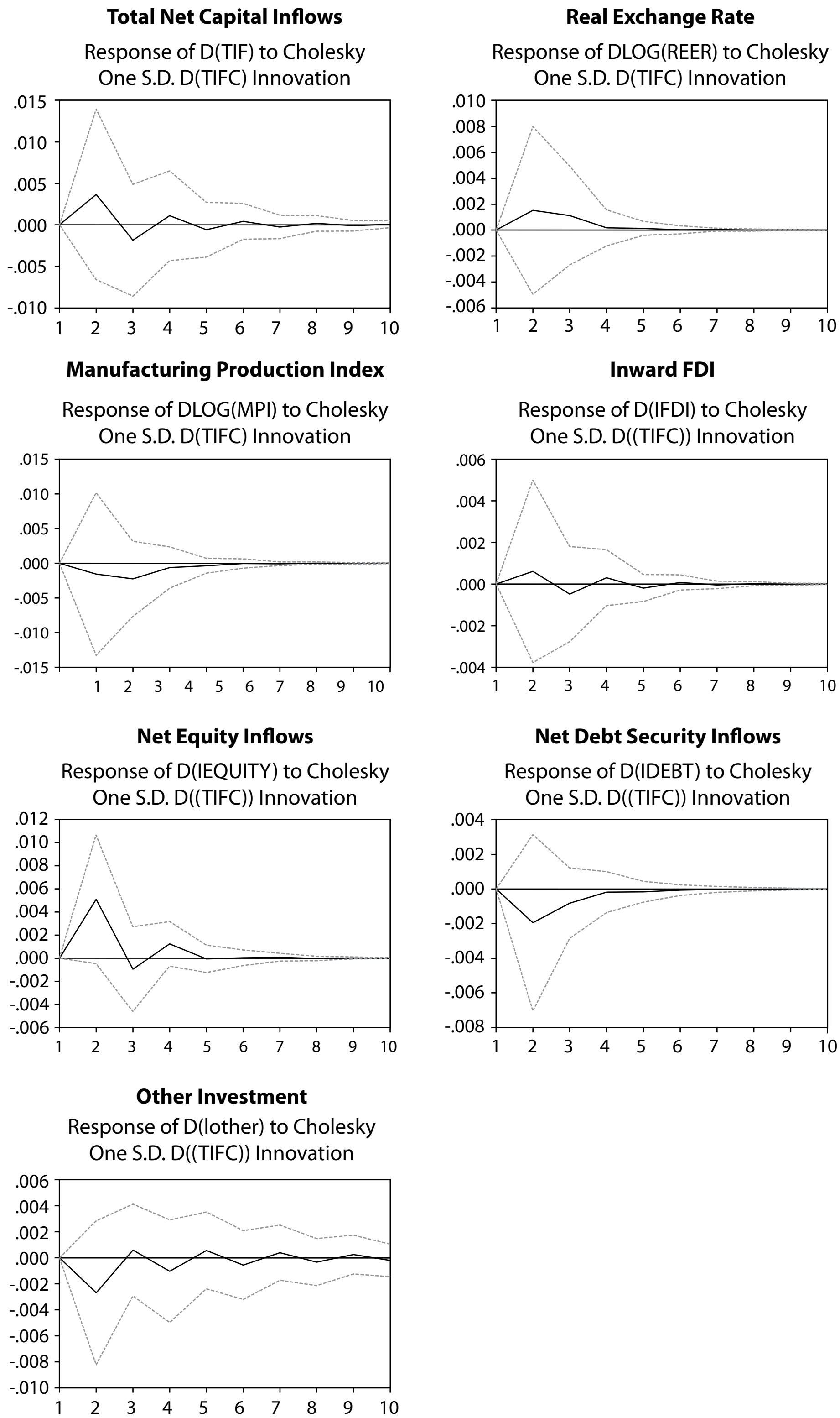
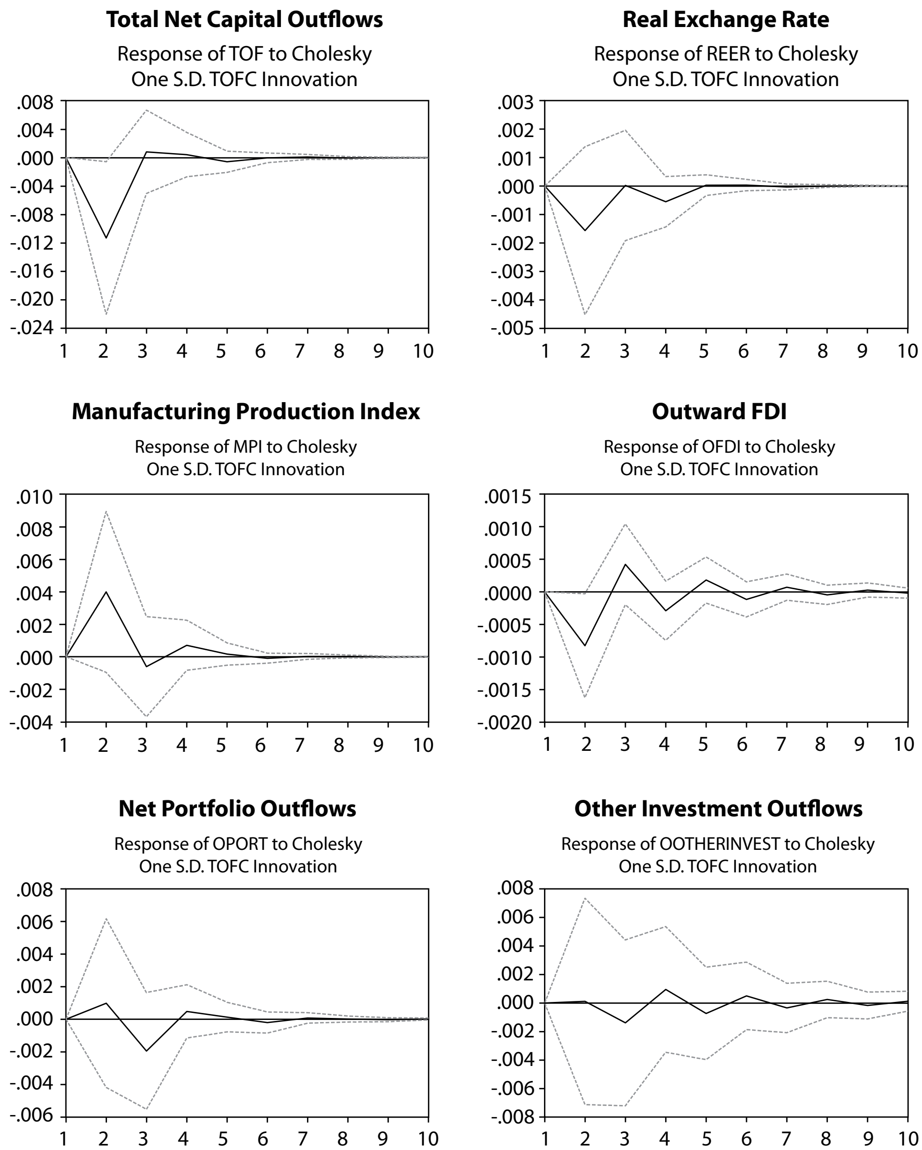


Figure 4: *continued.*

c. Thailand: Impulse Responses to Capital Inflows Restriction



d. Thailand: Impulse Responses to Capital Outflows Restriction



FDI = foreign direct investment, GDP = gross domestic product.

Note: The solid line represents point estimate, while the dotted lines show 95% probability band. The positive sign is assigned for all asset types of capital inflows and outflows. A higher (lower) capital control index represents a more (less) restrictive capital outflow and inflow policy. Thus, for example, the negative relationship between capital outflows and capital outflow policy (TOFC) implies that relaxation in capital outflow control tends to increase net capital outflows.

In general, the design of capital restrictions is crucial in meeting the goals of the central bank. In the case of Thailand, capital restrictions could, to some extent, limit the inflows of short-term capital. But the restrictions evidently do not help reduce the appreciation pressure on the real exchange rate because of a switching effect. Hence, imposing capital restrictions should be done with caution since such restrictions could hurt the production side of the economy, as shown by the negative impact of the restrictions on the MPI.

On the assets side, a relaxation of overall capital restrictions helps to encourage Thai residents to invest overseas. This is reflected in the negative relationship of TOFC (i.e., the lower the index, the greater the degree of capital relaxation) with total capital outflows (Figure 4b). The impact of a relaxation of restrictions on capital outflows is highest in the second quarter before dying down within a year. The relaxation of overall restrictions on capital outflows helps to encourage investors to invest overseas, mostly in the form of FDI, while the effects on portfolio and other investment outflows are statistically insignificant. The impulse responses also show that portfolio and other investment outflows have a slower response to the relaxation of restrictions than FDI, with the peak occurring in the third quarter for the former two flows compared to the second quarter for FDI. The standard deviations associated with the former outflows are also far wider than that associated with FDI.

While cross-border mergers and acquisitions (M&A) have become more important in total FDI outflows,[10] our results show that in addition to the relaxation of outward FDI policy, liberalization in other asset types, especially equity and debt securities, helps firms undertake outward FDI. This is because in addition to cash, issuing common stocks or the exchange of stocks have recently become popular modes of payments for M&A transactions. Relaxing restrictions on outward FDI per se would have a smaller impact on encouraging FDI outflows.

The impulse response also shows that a relaxation of capital outflow restrictions (i.e., a decline in TOFC) gives rise to an appreciation of the real exchange rate (i.e., an increase in the REER index), although it is statistically insignificant. The slow responses of portfolio and other investment outflows could be one of the reasons for such an appreciation.

The MPI tends to respond negatively (positively) and significantly to the overall relaxation (tightening) of restrictions on capital outflows as shown in Appendix 2. This result is also found in the case of Malaysia. The negative relationship may arise from the fact that as investment (both quantity and quality) in these countries is still relatively low after the Asian financial crisis, encouraging capital outflows at this stage may only encourage the country to recycle savings without the necessary structural adjustments in economic fundamentals. Thus, the efficient use of savings (capital) to improve both the quantity and quality of investment in these countries is needed, in addition to a well-designed liberalization policy to encourage de facto capital outflows.

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10 M&A has become an important form of outward FDI. In 2008, more than 50% of total outward FDI from Thailand was in the form of M&As.

Table 1a: Estimation Results for Net Capital Inflows (Liability) in Malaysia

	D(TIF_SA)	D(IFDI_SA)	D(IPORT_SA)	D(Iother_SA)
D(TIF_SA(-1))	-0.491686			
	[-3.25288]*			
D(IFDI_SA(-1))		-0.817856		
		[-5.22647]*		
D(IPORT_SA(-1))			-0.483119	
			[-3.88388]*	
D(Iother_SA(-1))				-0.409287
				[-2.31487]*
DLOG(REER(-1))	0.22644	0.195165	0.117421	0.100407
	[0.24864]	[0.94593]	[0.21333]	[0.32648]
DLOG(RGDPMALAY(-1))	-0.873608	0.398554	-0.336928	-0.046923
	[-0.57525]	[1.17272]***	[-0.36547]	[-0.09453]
D(RINTERESTGTB(-1))	0.00026	2.01E-05	0.004636	-0.000498
	[0.01473]	[0.00511]	[0.42261]	[-0.07722]
D(TIFC(-1))	-0.512218	-0.185456	-0.787753	-0.187274
	[-0.44459]	[-1.58787]**	[-1.13481]***	[-0.92152]
C	-0.019972	-0.008027	1.75E-05	-0.017244
	[-0.61295]	[-1.21885]***	[0.00089]	[-1.67585]**
DLOG(RGDPG3)	2.137705	-0.023073	0.526439	0.979027
	[1.92322]*	[-0.09366]	[0.79481]	[2.55187]*
DLOG(SHAREUSA)	0.0035	0.148208	-0.045271	0.094586
	[0.01189]	[2.12014]*	[-0.25621]	[0.91838]
R-squared	0.472633	0.533544	0.673364	0.47165
Adj. R-squared	0.303122	0.383612	0.552388	0.301824
Sum sq. resids	0.194928	0.009895	0.067637	0.023443
S.E. equation	0.083437	0.018798	0.050051	0.028935
F-statistic	2.788213	3.558566	5.566079	2.777244
Log likelihood	46.26184	102.8941	66.37281	86.50504
Akaike AIC	-1.908518	-4.889164	-2.914358	-4.026581
Schwarz SC	-1.477574	-4.458221	-2.44032	-3.595637
Mean dependent	-0.011687	-0.001002	-0.005568	-0.0029
S.D. dependent	0.099949	0.023944	0.07481	0.034629

*, **, and *** indicate statistical significance at the 15%, 10%, and 5% level, respectively.
Source: Authors' estimations.

Table 1b: Estimation Results for Net Capital Outflows (Asset) in Malaysia

	TOF_SA	D(OFDI_SA)	OPORT_SA	Oother_SA
TOF_SA(-1)	0.485926			
	[3.38327]*			
D(OFDI_SA(-1))		-0.358848		
		[-2.31134]*		
OPORT_SA(-1)			0.172846	
			[1.25586]***	
Oother_SA(-1)				0.33074
				[2.20549]*
DLOG(REER(-1))	0.836628	0.118667	-0.035528	0.040772
	[1.22503]***	[1.22649]***	[-0.36334]	[0.14146]
DLOG(RGDPMALAY(-1))	1.399517	0.384024	0.208569	0.592798
	[1.27479]***	[2.44453]*	[1.40548]**	[1.31894]***
D(RINTERESTGTB(-1))	-0.02331	-0.000252	-0.002306	0.002353
	[-1.72602]**	[-0.13804]	[-1.31850]***	[0.43160]
D(TOFC(-1))	-0.524732	-0.048857	0.098433	0.09267
	[-0.53104]	[-0.45325]	[0.98360]	[0.29559]
C	0.562823	-0.00748	0.831221	0.66884
	[3.73884]*	[-2.39218]*	[6.01103]*	[4.46209]*
DLOG(RGDPG3)	-2.193983	0.225596	-0.172847	-0.221068
	[-2.52489]*	[1.83278]*	[-1.49073]**	[-0.58101]
DLOG(SHAREUSA)	0.513411	0.068468	0.01377	0.160427
	[2.33101]*	[2.16876]*	[0.45846]	[1.74454]**
R-squared	0.539613	0.682318	0.618672	0.678681
Adj. R-squared	0.3691	0.564658	0.457341	0.559674
Sum sq. resids	0.103077	0.002097	0.001793	0.018156
S.E. equation	0.061787	0.008812	0.008305	0.025932
F-statistic	3.164634	5.799058	3.834803	5.702871
Log likelihood	58.36773	132.3747	135.3443	91.36079
Akaike AIC	-2.493038	-6.388142	-6.491804	-4.229515
Schwarz SC	-2.019	-5.914104	-5.974672	-3.755477
Mean dependent	1.051245	0.000881	1.00669	1.007095
S.D. dependent	0.077789	0.013356	0.011274	0.039079

*, **, and *** indicate statistical significance at the 15%, 10%, and 5% level, respectively.
Source: Authors' estimations.

Table 2a: Estimation Results for Net Capital Inflows (Liability) in Thailand

	D(TIF_SA)	D(IFDI_SA)	D(IEQUITY_SA)	D(IDEBT_SA)	D(Iother_SA)
D(TIF_SA(-1))	-0.737724				
	[-7.76352]*				
D(IFDI_SA(-1))		-0.514003			
		[-3.19640]*			
D(IEQUITY_SA(-1))			-0.516778		
			[-3.26844]*		
D(IDEBT_SA(-1))				-0.27529	
				[-2.10674]*	
D(Iother_SA(-1))					-0.822942
					[-6.49472]*
DLOG(REER(-1))	-0.79331	-0.19519	-0.123054	-0.001477	-0.038024
	[-2.87602]*	[-2.04649]*	[-1.07470]***	[-0.01425]	[-0.32070]
DLOG(MPI(-1))	-0.081936	-0.002591	0.00403	0.00216	0.00131
	[-0.63424]	[-1.21065]***	[1.41537]**	[0.89341]	[0.47904]
D(RINTERESTGTB(-1))	0.010032	-0.023119	-0.079988	0.047343	0.043509
	[1.67766]**	[-0.52356]	[-1.44584]**	[0.96180]	[0.76830]
D(TIFC(-1))	0.148469	0.014909	0.118861	-0.044564	-0.065875
	[0.71581]	[0.27862]	[1.86873]*	[-0.76945]	[-0.97796]
C	0.007386	-0.00013	0.001729	-0.00267	0.002554
	[1.07893]***	[-0.05270]	[0.57145]	[-0.96634]	[0.80635]
DLOG(RGDPG3)	-0.122072	0.01358	-0.035144	0.375589	0.049637
	[-0.35404]	[0.10971]	[-0.22870]	[2.70680]*	[0.31475]
DLOG(SHAREUSA)	0.320584	0.033458	0.036968	-0.115698	0.044292
	[3.07619]*	[0.90308]	[0.79615]	[-2.69580]*	[0.92200]
R-squared	0.752378	0.354879	0.394832	0.616619	0.598283
Adj. R-squared	0.686346	0.167585	0.219138	0.488826	0.464377
Sum sq. resids	0.030316	0.004053	0.00619	0.004925	0.006372
S.E. equation	0.031789	0.011435	0.014131	0.012813	0.014574
F-statistic	11.39408	1.894774	2.247271	4.825121	4.467942
Log likelihood	84.2745	130.8694	122.1903	126.8767	121.5969
Akaike AIC	-3.860231	-5.896067	-5.472698	-5.652524	-5.394971
Schwarz SC	-3.476332	-5.478122	-5.054753	-5.192785	-4.935233
Mean dependent	0.004126	-0.000957	-4.38E-05	0.000559	0.001778
S.D. dependent	0.056761	0.012533	0.015991	0.017921	0.019913

*, **, and *** indicate statistical significance at the 15%, 10%, and 5% level, respectively.
Source: Authors' estimations.

Table 2b: Estimation Results for Net Capital Outflows (Asset)

	TOF_SA	D(OFDI_SA)	D(OPORT_SA)	D(Oother_SA)
TOF_SA(-1)	-0.239129			
	[-1.89564]*			
D(OFDI_SA(-1))		-0.663648		
		[-4.27946]*		
D(OPORT_SA(-1))			-0.479915	
			[-3.47609]*	
D(Oother_SA(-1))				-0.720702
				[-5.68679]*
DLOG(REER(-1))	-0.010222	-0.012433	0.229021	0.198478
	[-0.01904]	[-0.33663]	[0.94397]	[0.61500]
DLOG(MPI(-1))	-0.559985	-0.026749	-0.312811	-0.249159
	[-2.09091]*	[-1.39159]**	[-2.62933]*	[-1.56140]*
D(RINTERESTGTB(-1))	-0.012705	0.000356	-0.001047	-0.009186
	[-1.00712]	[0.41850]	[-0.18762]	[-1.19339]***
D(TOFC(-1))	-1.21857	-0.079707	0.094508	0.011021
	[-2.16572]*	[-2.13127]*	[0.38146]	[0.03042]
C	1.288433	0.000739	0.003581	0.005821
	[9.90472]*	[0.70623]	[0.52427]	[0.63495]
DLOG(RGDPG3)	-0.42778	-0.033368	0.607861	0.201426
	[-0.51656]	[-0.59667]	[1.65640]*	[0.39712]
DLOG(SHAREUSA)	0.940492	0.018343	0.087510	0.007460
	[4.05058]*	[1.17967]**	[0.86375]	[0.05468]
R-squared	0.683691	0.432366	0.503755	0.611648
Adj. R-squared	0.559427	0.236631	0.332636	0.495143
Sum sq. resids	0.121259	0.000578	0.024900	0.047583
S.E. equation	0.065808	0.004464	0.029302	0.039826
F-statistic	5.501923	2.208930	2.943890	5.249955
Log likelihood	59.21663	166.1435	90.87766	77.92563
Akaike AIC	-2.360831	-7.757173	-3.993883	-3.396282
Schwarz SC	-1.854168	-7.292731	-3.529441	-2.974062
Mean dependent	1.032267	0.000356	0.001383	1.03E-05
S.D. dependent	0.099145	0.005109	0.035869	0.056051

*, **, and *** indicate statistical significance at the 15%, 10%, and 5% level, respectively.
Source: Authors' estimations.

VI. Conclusion

This study uses VAR estimation to examine the impact of higher-frequency indexes of capital controls in Malaysia and Thailand. Thailand introduced a number of capital restriction measures since 2003 to discourage net capital inflows as well as encourage net capital outflows. In contrast, Malaysia, which introduced strict capital control measures during the 1997/1998 Asian financial crisis, has gradually lifted the restrictions since the early 2000s.

We find that restrictions in Thailand have no significant effect on the volume of inflows, but are especially effective for outflows, particularly FDI. In Malaysia, capital restrictions tend to have a significant impact on the volume of inward FDI and portfolio inflows.

Capital controls have been used not only to reduce capital inflows or change the composition of capital flows, but also to achieve other goals such as to prevent the formation of asset bubbles, curb exchange rate appreciation, and allow more monetary policy independence. Results obtained in this study show that changes in capital account restrictions do not have a significant impact on the real exchange rate in both Malaysia and Thailand.

Our results imply that, unless carefully designed, the intent of policy makers using capital control measures to deter short-term disruptive inflows may not be successful. Even when they are effective, the effects are likely to be only temporary. The more effective and permanent way to shift the composition of foreign capital to less volatile longer-term inflows is to improve the investment climate and develop domestic financial markets including local currency bond markets.

Appendix 1: Chronology of Capital Liberalization/ Restrictions in Malaysia and Thailand, 1990–2010

Malaysia

Date	Events
1992	
April	Total borrowing by residents in foreign currency from domestic commercial and merchant banks to finance imports of goods and services was restricted to the equivalent of RM1 million Assigned -1; Weight 0.25
July	Borrowing under the export credit refinance facilities (both pre- and post-shipment) by nonresident controlled companies would be considered domestic borrowing Assigned -1; Weight 0.25
October	Offshore guarantees obtained by residents to secure domestic borrowing, except offshore quarantees (whether dominated in ringgit or foreign currency) without recourse to Malaysian residents and obtained from the licensed offshore banks in Labuan to secure domestic borrowing, were deemed as foreign borrowing. In cases where an offshore guarantee is denominated in ringgit, it was subject to the condition that in the event the guarantee is called on, the licensed offshore banks in Labuan must make payments in foreign currency (with some exceptions), not in ringgit. Assigned -1; Weight 0.25
November	The guidelines on foreign equity capital ownership were liberalized. Companies exporting at least 80% of their production were no longer subject to any equity requirement, whereas companies exporting between 50% and 79% of their production were permitted to hold 100% equity, provided that they had invested $50 million or more in fixed assets or completed projects with at least 50% local value added, and that company's products do not compete with those produced by domestic firms. These guidelines were not to apply to sectors in which limits on foreign equity participation have been established. Assigned 1; Weight 1
December	Residents and the offshore companies in Labuan were prohibited from transacting with the currency of the FYR Yugoslavia without specific prior approval from the Controller of Foreign Exchange Assigned -1; Weight 0.25
1993	
December	Nonresident-controlled companies involved in manufacturing and tourism-related activities were freely allowed to obtain domestic credit facilities to finance the acquisition and/or the development of immovable property required or their own business activities. Assigned 1; Weight 0.5
1994	
January	A ceiling was placed on the net external liability position of domestic banks (excluding trade-related and direct investment flows) Assigned -1; Weight 0.5
January	Residents were prohibited to sell the following Malaysian securities to nonresidents: banker's acceptances, negotiable instruments of deposit, Bank Negara bills, treasury bills, and government securities (including Islamic securities) with a remaining maturity of 1 year or less Assigned -1; Weight 0.5
February	Residents were prohibited to sell to nonresidents all forms of private debt securities (including commercial papers, but excluding securities convertible into ordinary shares) with a remaining maturity of 1 year or less The restriction on the sale of Malaysian securities to nonresidents was extended to both the initial issue of the relevant security and the subsequent secondary market trade Assigned -1; Weight 0.5

continued.

Appendix 1: *continued.*

February	Prohibition of forward transactions (on bid side) and nontrade-related swaps by commercial banks with foreign customers to curtail the speculative activities of offshore agents seeking long positions in ringgit Assigned -1; Weight 0.5
August	Residents were permitted to sell to nonresidents any Malaysian securities Assigned 1; Weight 1.0
August	Prohibition of forward transaction and nontraded swaps by commercial banks were lifted Assigned 1; Weight 0.5
December	Residents may borrow in foreign currency up to a total of the equivalent of RM5 million from nonresidents and from commercial and merchant banks in Malaysia Assigned 1; Weight 0.5
December	Nonresident-controlled companies were allowed to obtain credit facilities, including immovable property loans, up to RM10 million without specific approval, provided that at least 60% of their total credit facilities from banking institutions were obtained from Malaysian-owned financial institutions. Nonresidents with valid work permits may obtain domestic borrowing to finance up to 60% of the purchase prices of residential property for their own accommodation. Assigned 1; Weight 0.5
1995	
January	A ceiling of the net external liability position of domestic banks was lifted Assigned 1; Weight 0.5
June	Corporate residents with a domestic credit facility were allowed to remit funds up to the equivalent of RM10 million for overseas investment purposes each calendar year. Assigned 1; Weight 1.0
1997	
August	Controls were imposed on banks to limit outstanding noncommercial-related ringgit offer-side swap transactions (i.e., forward order/spot purchases of ringgit by foreign customers) to $2 million per foreign customer or its equivalent. Assigned -1; Weight 0.5
August	Hedging requirements of foreigners were imposed, although trade-related and genuine portfolio and foreign direct investment were excluded Assigned -1; Weight 0.5
August	Residents are allowed to enter into noncommercial-related swap transactions up to a limit (no limits previously) Assigned -1; Weight 0.5
August	A ban on short-selling of the listed securities on KLSE was introduced to limit speculative pressures on stock prices and exchange rates Assigned -1; Weight 0.5
1998	
September	A requirement introduced to repatriate all ringgit held offshore (including ringgit deposits in overseas banks) by 1 October 1998 (BNM approval was required thereafter). Approval requirement was imposed to transfer funds between external accounts (freely allowed previously) and for the use of funds other than permitted purposes. All purchases and sales of ringgit facilities can only be transacted through authorized depository institutions. Assigned -1; Weight 0.25
September	Licensed offshore bank were prohibited to trade in ringgit assets Assigned -1; Weight 0.25

continued.

Appendix 1: *continued.*

September	A limit was introduced on exports and imports of ringgit by resident and nonresident travelers. Residents were prohibited from obtaining ringgit credit facilities from nonresidents. Assigned -1; Weight 0.5
September	All imports and exports were required to be settled in foreign currency Assigned -1; Weight 0.5
September	Approval was required for nonresidents to convert ringgit in external accounts into foreign currency, except for purchases of ringgit assets, conversion of profits, dividends, interest, and other permitted purposes Assigned -1; Weight 0.5
September	A 12-month waiting period was imposed for nonresidents to convert ringgit proceeds from the sale of Malaysian securities held in external accounts (excluding FDI, repatriation of interest, dividends, fees, commissions, and rental income from portfolio investment). Residents were prohibited from granting ringgit credit facilities to nonresident corresponding banks and stock-brokering companies (previously subject to a limit). Trading in Malaysia shares on Singapore's central limits order book (CLOB) OTC market became de facto prohibited as a result of strict enforcement of the existing law requiring Malaysian shares to be registred in KLSE prior to trade. Assigned -1; Weight 2.0
September	Beyond certain limits, prior approval was required for all residents investing abroad in any form Assigned -1; Weight 0.5
December	Residents were allowed to grant loans to nonresidents for purchases of immovable properties from 12 December 1998 to 12 January 1999 Assigned -1; Weight 1.0
1999	
January	Designated nonresident accounts for future trading are allowed and exempt from the 12-month holding period. Capital flows for the purpose of trading derivatives on the commodity and monetary exchange of Malaysia and the Kuala Lumpur options and financial futures exchange were permitted for nonresidents, without being subject to the rules governing external accounts, when transactions were conducted through "designated external accounts" that could be treated with tier-1 commercial banks in Malaysia. Assigned 1; Weight 0.5
February	The 12-month waiting period was replaced with a graduated system of exit levy on the repatriation of the principal of capital investments (in shares, bonds, and other financial instruments, except for property investments) made prior to 15 February 1999. The levy decreased over the duration of the investment, and thus penalized earlier repatriations; the levy was 30% if repatriated less than 7 months after entry; 20% if repartitioned in 7–9 months, and 10% if 9–12 months. No levy on principal was imposed if repatriated after 12 months. Assigned -1; Weight 0.5
March	The ceiling on the import and export of ringgit for border trade with Thailand was raised Assigned 1; Weight 0.25
May	Investors in the Malaysian Exchange of Securities Dealing and Automated Quotation were exempted from the exit levy introduced on 15 February 1999 Assigned 1; Weight 0.25
July	Residents were allowed to grant overdraft facility in aggregate not exceeding RM200 million for intraday and not exceeding RM5 million for overnight to a foreign stock-brokering company subject to certain conditions Assigned 1; Weight 0.25

continued.

Appendix 1: *continued.*

September	Commercial banks were allowed to enter into short-term currency swap arrangements with nonresident stockbrokers to cover payments for purchases of shares on the KLSE and in outright ringgit forward sale contracts with nonresidents who have firm commitment to purchase shares on the KLSE, for maturity periods not exceeding five working days and with no rollover option Assigned 1; Weight 0.25
October	Residents were allowed to grant ringgit loans to nonresidents for purchases of immovable properties from 29 October 1999 to 7 December 1999 Assigned 1; Weight 1.0
2000	
March	Funds arising from sale of securities purchased by nonresidents on the CLOB can be repatriated without payment of exit levy Assigned 1; Weight 0.25
April	Nonresident controlled companies raising domestic credit through private debt securities were exempted from RM19 million limit and the 50:50 requirement for issuance of private debt securities on tender basis through the fully automated system for tendering, to develop domestic bond market. Assigned 1; Weight 0.25
June	Administrative procedures issued to facilitate classification of proceeds from the sale of CLOB securities as being free from levy. Assigned 1; Weight 0.25
July	Residents and nonresidents were no longer required to make a declaration in the travel's declaration from as long as they carry currency notes and/or travelers' checks within the permissible limits. For nonresidents, the declaration was incorporated into the embarkation card issued by the Immigration department. Assigned 1; Weight 0.25
September	Licensed offshore banks in the Labuan international offshore fin center were allowed to invest in ringgit assets and instruments in Malaysia for their own accounts only and not on behalf of clients. The investment could not be financed by ringgit borrowing. Assigned 1; Weight 0.5
December	Licensed company banks were allowed to extend intraday overdraft facilities not exceeding RM200 million in aggregate and overnight facilities not exceeding RM10 million (previously 5 million) to foreign stock-brokering companies and foreign global custodian banks. Assigned 1; Weight 1.0
2001	
February	The exit levy on profit repatriated after one year from the month the profits are realized was abolished. Portfolio profits repatriated within one year remained subject to the 10% levy. Assigned 1; Weight 0.25
May	The 10% exit levy imposed on profits arising from portfolio investments repatriated within one year of realization was abolished. Assigned 1; Weight 0.25
June	All controls on the trading of futures and options by nonresidents on the MDEX were eliminated. The commodity and monetary exchange of Malaysia and the KLSE were merged to form the MDEX. Assigned 1; Weight 0.25

continued.

Appendix 1: *continued.*

June	Resident insurance companies were allowed to extend ringgit policy loans to nonresident policy holders with the terms and conditions of the policies. The amount of ringgit loans extended may not exceed the policy's attended cash surrendered value and may be for the duration of the policies. Assigned 1; Weight 0.25
July	Resident financial institutions were allowed to extend ringgit loans to nonresidents to finance the purchase or construction of any immovable property in Malaysia (excluding financing for purchases of land only) up to a maximum of three property loans in aggregate. Assigned 1; Weight 0.25
2002	
November	Banks are allowed to extend additional ringgit credit facilities to nonresidents up to an aggregate of RM5 million per nonresident to finance projects undertaken in Malaysia. Prior to this, credit facilities in ringgit to a nonresidents for purposes other than purchases of threeimmovable properties or a vehicle were limited to RM200,000. Assigned 1; Weight 0.25
December	In addition to obtaining property loans to finance new purchases or construction of any property in Malaysia, nonresidents may also refinance their ringgit domestic property loans. The above is subject to a maximum of three property loans. Assigned 1; Weight 0.25
December	The limit of RM10,000 equivalent in foreign currency for investment abroad by residents under the Employee Share Option/Purchase Scheme has been removed. Effective this date, general permission is granted for overseas investment for this purpose. Assigned 1; Weight 0.5
December	Payments between residents and nonresidents as well as between nonresidents for ringgit assets are liberalized to allow payments to be made either in ringgit or foreign currency (previously, only in ringgit) Assigned 1; Weight 0.25
2003	
March	Banking institutions as a group was permitted to extend ringgit overdraft facilities, not exceeding RM500,000 in aggregate, to a nonresident customer, if the credit facilities are fully covered at all times by fixed deposits placed by the nonresident customer with the banking institutions extending the credit facilities. Assigned 1; Weight 0.50
April	Exporters were allowed to retain a portion of their export proceeds in foreign currency accounts with onshore licensed banks in Malaysia with overnight limits ranging between the equivalent of US$ 1 million and US$ 70 million, or any other amount that has been approved (previously, the limit was between US$ 1 million and US$ 10 million). Assigned 1; Weight 0.50
April	Residents were allowed to sell up to 12 months forward foreign currency receivables for ringgit to an authorized dealer for any purpose, if the transaction is supported by a firm underlying commitment to receive such currency. Assigned 1; Weight 0.50
April	The maximum amount of payment of profits, dividends, rental income, and interest to a nonresident on all bona fide investments that may be remitted without prior approval, but upon completion of statistical forms, was increased from RM10,000 to RM50,000, or its equivalent in foreign currency, per transaction. Assigned 1; Weight 0.50

continued.

Appendix 1: *continued.*

May	The threshold level for acquisition by foreign and Malaysian interests exempted from FIC approval was raised from RM5 million to RM10 million. Acquisition proposals by licensed manufacturing companies were centralized at the MITI, while corporate proposals were centralized at eh SC. These proposals no longer required FIC consideration. Assigned 1; Weight 1.0
June	Foreign equity holding in manufacturing projects was allowed up to 100% for all types of investment. Assigned 1; Weight 0.5
2004	
April	Residents were allowed to sell forward non-export foreign currency receivables for ringgit or another foreign currency to an authorized dealer or an approved merchant bank for any purpose, provided the transaction is supported by an underlying commitment to receive currency. Residents with permitted foreign currency borrowing were allowed to enter into interest rate swaps with onshore licensed banks, approved merchant banks, or licensed offshore banks in Labuan, provided that the transaction is supported by a firm underlying commitment. Resident individuals with funds abroad (not converted from ringgit) were allowed to maintain non export foreign currency accounts offshore without any limit imposed on overnight balances. Resident companies with domestic borrowing were allowed to open non export foreign currency accounts with licensed onshore banks in Malaysia to retain foreign currency receivables other than export proceeds with no limit on the overnight balances. Resident companies without domestic borrowing were allowed to open nonexport foreign currency accounts in licensed offshore banks in Labuan up to an overnight limit of $ 500,000 or its equivalent. Resident individuals were permitted to open foreign currency accounts to facilitate payments for education and employment overseas, with an aggregate overnight limit equivalent to $ 150,000 with Labuan offshore banks. Previously, the limit was $100,000 ($50,000 for overseas banks). Assigned 1; Weight 1.0
April	Resident individuals who have foreign currency funds were allowed to invest freely in any foreign currency products offered by onshore licensed banks. Assigned 1; Weight 1.0
April	The amount of export proceeds that residents may retain in foreign currency accounts with licensed onshore banks was increased from the range of $1 million to $70 million to the range of $ 30 million to $ 70 million. Assigned 1; Weight 0.5
April	Resident banks and nonbanks were permitted to extend ringgit loans to finance or refinance the purchase or construction of any immovable property in Malaysia (excluding financing for purchases of land only) up to a maximum of three property loans in aggregate. The limit for banking institutions on loans to nonresidents (excluding stock-brokering companies, custodian banks and correspondent banks) was raised from RM200,000 to RM10,000,000. Assigned 1; Weight 0.5
April	Licensed insurers and takaful operators (Islamic insurance) were allowed to invest abroad up to 5% of their margins of solvency and total assets. These entities were also allowed to invest up to 10% of net asset value in their own investment-linked funds. Assigned 1; Weight 0.5

continued.

Appendix 1: *continued.*

April	Unit trust management companies were allowed to invest abroad the full amount of net asset value attributed to nonresidents, and up to 10% of net asset value attributed to residents without prior COFE approval. In addition, fund/asset managers were allowed to invest abroad up to the full amount of investments of nonresident clients and up to 10% of investments of their resident clients. Assigned 1; Weight 0.5
April	Bank Negara Malaysia liberalized its foreign exchange administration rules to facilitate multilateral development banks (MDBs) or multilateral financial institutions (MFIs) to raise ringgit-denominated bonds in the Malaysian capital market. The size of the bond to be issued by MDBs or MFIs should be large enough to contribute to the development of the domestic bond market, and the minimum tenure of the bonds should be 3 years. Ringgit funds raised from the issuance of ringgit-denominated bonds could be used either in Malaysia or overseas. There would be no restriction for MDB or MFI issuers and nonresident investors of ringgit-denominated bonds to maintain foreign currency accounts, or ringgit accounts as external accounts with onshore licensed banks in Malaysia. MDBs, MFIs, or nonresident investors could enter into forward foreign exchange contracts or swap arrangements to hedge ringgit exposure, and MDB or MFI issuers could enter into interest rate swap arrangements with onshore banks. Bank Negara Malaysia liberalized rules to facilitate for foreign multinational corporations (MNCs) the raising of ringgit-denominated bonds in the Malaysian capital market. The ringgit funds raised from such issues could be used in Malaysia or overseas. MNC issuers and nonresident investors of ringgit-denominated bonds could maintain, without restrictions, foreign currency accounts, or ringgit accounts as External Accounts with any onshore licensed bank. MNC issuers or nonresident investors would be allowed forward exchange contracts of swap arrangements to hedge ringgit exposures, and MNC issuers would be allowed interest rate swap arrangements with onshore banks. Assigned 1; Weight 0.5
2005	
April	Residents without domestic credit facilities are free to invest abroad in foreign currency, to be funded either from their own foreign currency or from conversion of ringgit funds. Individuals with domestic credit facilities may invest abroad any amount of their foreign currency funds or convert ringgit up to RM100,000 per annum for such purposes. Assigned 1; Weight 0.5
April	Corporations with domestic credit facilities are also free to use their foreign currency funds or convert ringgit up to RM10 million per annum for investment in foreign currency assets. These corporations must have a minimum shareholders' fund of RM100,000 and must be operating for at least 1 year. Assigned 1; Weight 0.5
April	The threshold for investing funds abroad attributed to residents by a unit trust company was increased to 30%, from the current 10%, of the net asset value of all resident funds managed by the unit trust company. There continues to be no restriction on investment abroad for funds attributed to nonresident clients. Fund managers may now invest abroad any amount of funds belonging to nonresident clients and resident clients that do not have any domestic credit facilities. They are also free to invest up to 30% of funds of resident clients with domestic credit facilities. Previously they may invest only 10% of resident funds, irrespective whether the resident clients had any domestic credit facility. Assigned 1; Weight 0.5

continued.

Appendix 1: *continued.*

April	Residents are free to open foreign currency assets (FCA) onshore or offshore (except for export FCA). No specific prior permission is required. There is no limit on the amount of foreign currency funds a resident is able to retain onshore or offshore. A resident without any domestic credit facilities is free to convert any amount of his ringgit funds for credit into his FCA maintained onshore or offshore. A resident corporation with domestic credit facilities is allowed to convert ringgit up to RM10 million in a calendar year for credit into its FCA. Assigned 1; Weight 0.5
April	A resident individual with domestic credit facilities is also allowed to convert ringgit for credit into FCA as follows. For education or overseas employment purposes: Up to $150,000 for credit into onshore FCA or FCA maintained with offshore banks in Labuan; up to $50,000 for credit into overseas FCA. For other purposes: up to RM100,000 per annum. Assigned 1; Weight 0.5
April	Exporters may now retain any amount of their foreign currency export proceeds onshore with licensed banks. The current limits of between $30 million and $100 million are abolished. All export proceeds continue to be required to be repatriated to Malaysia onshore. Assigned 1; Weight 0.5
April	Resident corporation, on a per corporate group basis, may now obtain foreign currency credit facilities up to the aggregate of RM50 million equivalent. The foreign currency borrowing may be used to finance overseas investment up to RM10 million equivalent. The aggregate limit for foreign currency borrowing by individuals is also increased from RM5 million to RM10 million equivalent. The funds may be used for any purpose, including financing overseas investments. Assigned 1; Weight 0.5
April	The rules for domestic borrowing by nonresident controlled companies are fully liberalized by removing the current RM50 million limit and the 3:1 gearing ratio requirement. Assigned 1; Weight 0.5
2007	
April	Abolish the net open position limit of licensed onshore banks. Previously, the open position limit was capped at 20% of the banks' capital base. Abolish the limits imposed on licensed onshore banks for foreign currency accounts maintained by residents. Allow investment banks in Malaysia to undertake foreign currency business subject to a comprehensive supervisory review on the capacity and capability of the investment banks. Assigned 1; Weight 0.5
April	Further flexibility for nonresident stock-brokering companies and custodian banks to obtain ringgit overdraft facilities from licensed onshore banks to avoid settlement failure due to inadvertent delays by rRemoving the previous overdraft limit of MYR200 million, and expanding the scope on utilization of the overdraft facility to include ringgit instruments settled through the Real Time Electronic Transfer of Funds and Securities System and Bursa Malaysia. Previously, utilization of the facility was confined only to shares traded on Bursa Malaysia. Abolish the limit on the number of residential or commercial property loans obtained by nonresidents. Under the previous policy, nonresidents were allowed to obtain a maximum limit of three property loans from residents to finance the purchase or construction of residential or commercial properties in Malaysia. Allow licensed onshore banks to appoint overseas branches of their banking group as a vehicle to facilitate the settlement of any ringgit assets of their nonresident clients. Remove restriction on Labuan offshore banks to transact in ringgit financial products on behalf of nonresident clients. Assigned 1; Weight 0.5

continued.

Appendix 1: *continued.*

April	Increase the limit of foreign currency borrowing that can be obtained by resident corporations from licensed onshore banks and nonresidents as well as through issuance of onshore foreign currency bonds, to MYR100 million equivalent in aggregate and on corporate group basis from the previous MYR50 million equivalent. The proceeds may be used for domestic purposes or offshore investment. Allow residents to hedge foreign currency loan repayment up to the full amount of underlying commitment. Assigned 1; Weight 0.5
April	Enhance flexibilities for resident individuals and corporations to invest in foreign currency assets as follows: (i) Increase the limit for resident individuals with domestic ringgit borrowing to invest in foreign currency assets up to RM1 million per calendar year from the previous limit of RM100,000 (ii) Increase the limit for resident corporations with domestic ringgit borrowing to invest in foreign currency assets up to RM50 million per calendar year from the previous limit of RM10 million Assigned 1; Weight 0.5
April	Increase the limit for resident institutional investors to invest in foreign currency assets as follows: (i) Unit trust companies: up to 50% of net asset value attributable to residents from the previous 30% of NAV (ii) Fund management companies: up to 50% of funds of resident clients with domestic credit facilities from the previous 30% level (iii) Insurance companies and takaful operators: up to 50% of NAV of investment-linked funds marketed from the previous 30% of NAV Assigned 1; Weight 0.5
June	The licensed onshore banks are also allowed to appoint overseas branches of their banking group to facilitate the settlement of any ringgit assets of their nonresident clients. The ringgit transactions undertaken by the overseas branches would be subject to the following conditions: (i) The overseas branches must conduct only straight pass-through transactions matched with a back-to-back arrangement on exchange rate, amount, and value date with the licensed onshore bank. There will be: —No gapping of the ringgit positions in the books of the overseas branches —No ringgit account, physical withdrawal, or transfer of ringgit at the overseas branches; all ringgit settlements must be made onshore —No public display of the ringgit exchange rate by the overseas branches (ii) The arrangement will be made available only to nonresident investors with firm underlying commitment to purchase or sell ringgit assets Assigned 1; Weight 0.5

continued.

Appendix 1: *continued.*

October	The registration requirement on investment in foreign currency assets exceeding RM50 million equivalent by a resident (individual or company on corporate group basis) without domestic ringgit borrowing is abolished Assigned 1; Weight 0.5
October	Foreign currency borrowing by residents: (i) The registration requirement on foreign currency borrowing in aggregate between RM50,000,001 and up to RM100 million equivalent by a resident company on corporate group basis from licensed onshore banks and nonresidents is abolished (ii) The registration requirement on foreign currency borrowing exceeding RM50 million equivalent by an approved operational headquarters from licensed onshore banks and nonresidents to finance its own operation is abolished (iii) The registration requirement on foreign currency borrowing exceeding RM50 million equivalent by a resident company from another resident company within the same corporate group using proceeds from an initial public offering on foreign stock exchanges is abolished Prepayment or repayment of foreign currency borrowing by residents: (i) The registration requirement on prepayment exceeding RM50 million equivalent on permitted foreign currency borrowing from a non-resident lender is abolished (ii) Repayment of foreign currency borrowing with no fixed tenure or repayment schedule is deemed to be a prepayment, and therefore, the registration requirement is also abolished Assigned 1; Weight 0.5
October	Investments of Islamic funds in FCA: (i) To further promote Malaysia as an Islamic financial center and a center for origination of Shariah-compliant investment instruments, the thresholds (50% of the net asset value [NAV] for unit trust companies and total funds attributable to residents with domestic ringgit borrowing for fund management companies) on investments of Islamic funds in foreign currency assets are abolished (ii) The investment in foreign currency assets by conventional funds managed by the unit trust and fund management companies continue to be subject to the existing thresholds of 50% of the NAV and the total funds attributable to resident clients with domestic ringgit borrowing (iii) The registration requirement on forward foreign exchange contracts exceeding RM50 million equivalent per contract for permitted capital account transactions and anticipatory current account transactions is abolished (iv) The registration requirement on ringgit-denominated loans exceeding RM50 million extended by a resident to a nonresident to finance or refinance the purchase or construction of residential and commercial properties in Malaysia is abolished Assigned 1; Weight 0.5
October	To provide greater flexibility to nonresident investors in managing their ringgit exposure, the requirement for a nonresident to reinvest within 7 working days the proceeds arising from the sale of ringgit assets prior to the maturity of the forward foreign exchange contract in order to continue with the existing forward foreign exchange contract is abolished With the abolition, a nonresident is allowed to continue with the existing forward foreign exchange contract entered with a licensed onshore bank for: (i) Proceeds arising from the sale of ringgit assets sold prior to the maturity of the forward foreign exchange contract (ii) Income from the ringgit assets Assigned 1; Weight 0.5

continued.

Appendix 1: *continued.*

November	Resident companies with export earnings are allowed to pay another resident company in foreign currency for the settlement of purchases of goods and services. The objective of this liberalization is to enhance Malaysia's competitiveness by reducing the cost of doing business for resident companies. With the liberalization, exporters would have greater control and flexibility in the management of their foreign currency cash flow, and hence more effectively settle their domestic and overseas transactions. Assigned 1; Weight 0.5
2008	
January	The requirement to submit the Overseas Account Statement by a resident company maintaining an overseas account, including a foreign currency account with a Licensed offshore bank in Labuan, is abolished. The requirement to submit the Inter-Company Account Statement by a resident company maintaining an intercompany account with a nonresident company is also abolished. Assigned 1; Weight 0.5
May	Borrowing in foreign currency by residents: A resident company is free to borrow any amount in foreign currency from (i) its nonresident, nonbank parent company; (ii) other resident companies within the same corporate group in Malaysia (previously, approval was required for any amount) (iii) licensed onshore banks. A resident company is free to obtain any amount of foreign currency supplier's credit for capital goods from nonresident suppliers. A resident company or an individual is free to refinance outstanding approved foreign currency borrowing, including principal and accrued interest. The thresholds for foreign currency borrowing of RM100 million in aggregate by a resident company on a corporate group basis and RM10 million for a resident individual would no longer be applicable for the above financing activities. Assigned 1; Weight 0.5
May	Borrowing in ringgit by residents from nonresidents: A resident company is allowed to borrow in ringgit, including through the issuance of ringgit-denominated redeemable preference shares or loan stocks: (i) of any amount from its nonresident, nonbank parent company to finance activities in the real sector in Malaysia; and (ii) up to RM1 million in aggregate from other nonresident, nonbank companies and individuals for use in Malaysia. A resident individual is allowed to borrow in ringgit up to RM1 million in aggregate from nonresident, nonbank companies and individuals for use in Malaysia. Previously, borrowing in ringgit of any amount from nonresidents required prior permission of the Controller of Foreign Exchange. Lending in ringgit by residents to nonresidents: (i) A resident company or individual is free to lend in ringgit of any amount to nonresident, nonbank companies and individuals to finance activities in the real sector in Malaysia (previously, only up to RM10,000 was allowed) (ii) A licensed onshore bank is free to lend in ringgit of any amount to nonresident, nonbank companies and individuals to finance activities in the real sector in Malaysia (previously, only up to RM10 million in aggregate was allowed). Assigned 1; Weight 0.5

continued.

Appendix 1: *continued.*

October	To promote Malaysia as an international Islamic financial center, Bank Negara Malaysia announced the following with immediate effect: All international Islamic banks are allowed to conduct the following transactions with any person in or outside Malaysia: (i) buy or sell foreign currency against another foreign currency (ii) borrow or lend in foreign currency All international Islamic banks, international takaful operators, and international currency business units of licensed onshore banks, takaful operators[3] or retakaful operators[4] are allowed to make payment in foreign currency to resident intermediaries (individuals and companies) for financial services rendered by the intermediaries to these institutions Assigned 1; Weight 0.5
2010	
April	Resident futures brokers are allowed to make payments to nonresidents for foreign currency-denominated derivatives (other than currency contracts) transacted on overseas specified exchanges. Residents are allowed to transact foreign currency-denominated derivatives (other than currency contracts) on the overseas specified exchanges only through resident futures brokers as follows: (i) any amount for transactions that are supported by firm underlying commitment (ii) subject to limits on investment in foreign currency assets for transactions that are not supported by a firm underlying commitment In undertaking the above, the resident futures brokers are required to ensure that: (i) the resident clients comply with the limits on investment in foreign currency assets if the derivative transactions are not supported by firm underlying commitment (ii) the derivatives transacted on the overseas specified exchanges do not involve ringgit directly or indirectly Assigned 1; Weight 0.5

continued.

Appendix 1: *continued.*

Thailand

Date	Events
1990	
April	Extension of the maximum holding period for foreign exchange acquired from all sources from 7 days to 15 days after receipt. This foreign exchange could be deposited at a commercial bank provided the balance outstanding does not exceed \$0.5 million per individual and \$5 million per legal entity Assigned 1; Weight 1.0
	Increase in the maximum net foreign assets of banks from 20% to 25% Assigned 1; Weight 0.5
November	Increase in the commercial bank's net foreign liabilities to 25% from 20% Assigned 1; Weight 0.5
1991	
April	Permission to the general public to conduct foreign exchange transactions directly with commercial banks Assigned 1; Weight 1.0
1993	
March	Bangkok International Banking Facilities (BIBF) licenses granted to domestic and foreign financial institutions by the Bank of Thailand (BOT) Assigned 1; Weight 2.0
October	Request for commercial banks to announce the minimum retail rate (MRR), minimum loan rate (MLR), and maximum margin to be added to the MRR as a reference rate for customers other than those eligible for the MLR Assigned -1; Weight 1.0
1994	
February	Increase in the annual ceiling on foreign exchange sales or withdrawals from foreign exchange deposits from \$5 million to \$10 million for the purpose of investing abroad or lending to domestic subsidiaries that commercial banks were authorized to approve Assigned 1; Weight 0.5
	Permission to authorized dealers to lend foreign exchange to nonresidents without limit. Lifting of the USD5 million per individual limit on commercial bank lending to nonresidents Assigned 1; Weight 1.0
August	Permission to financial companies to open representative offices abroad and to BIBF to establish branches in provincial areas Assigned 1; Weight 0.5
November	Reduction in ceiling of net foreign liability and assets to 15% and 20% from 20% and 25%, respectively Assigned -1; Weight 0.5
1995	
August	Imposed 7% reserve requirement imposed on commercial bank's nonresident baht deposits Assigned -1; Weight 1.0
October	Rise in the minimum disbursement size for BIBF (out-in) loans to individuals from \$0.5 million to \$2 million Assigned 1; Weight 0.5
1996	

continued.

Appendix 1: *continued.*

April	Extension of 7% reserve requirement to financial companies and financial and securities companies Assigned -1; Weight 0.5
	Grant of the second round BIBF license to foreign banks Assigned 1; Weight 0.5
August	Permission to to upgrade branches of foreign banks to full option Assigned 1; Weight 0.5
1997	
May	Prohibition of security lending transactions by nonresidents Assigned -1; Weight 2.0
	Introduction of the so called "two-tier"' market measure. With this measure, the BOT asked for cooperation from domestic financial institutions to limit baht lending to nonresidents. Assigned -1; Weight 2.0
June	Requirement for baht proceeds from sales of stock by nonresidents to be converted into foreign currency at onshore exchange rates Assigned -1; Weight 1.0
September	Repatriation of export proceeds exceeding B500,000 within 120 days from the date of export and the surrender to authorized banks within 15 days Assigned -1; Weight 1.0
November	Lifting of the foreign ownership limit of 25% for financial institutions on a case by case basis (period of 10 years) Assigned 1; Weight 1.0
1998	
January	Lifting of all restrictions pertaining to transfer of Thai baht from the sale of domestic securities by nonresidents imposed in 1997 Assigned 1; Weight 2.0
	Surrender of proceeds from exports to authorized banks within 7 days of receipt Assigned -1; Weight 1.0
	Requirement for commercial banks to maintain at least 6% of their nonresident foreign exchange deposits Assigned -1; Weight 1.0
	Replacement of two-tier market measures with the so-called "B50 million" guideline. To guard against potential speculation, Thai baht credit facilities provided by each financial institution to nonresidents in cases where there are no underlying trade or investment activities in Thailand was made subject to a maximum outstanding limit of B50 million per party. Assigned 1; Weight 0.5
October	It was clarified that in applying the maximum outstanding limit of B50 million, the nonresident's head office, branch representative offices, and affiliated companies are counted as one entity Assigned -1; Weight 0.5
2000	
August	Prescription of penalty for violation of the maximum outstanding limit on baht credit to nonresidents (e.g., 10 days suspension of repo transaction with BOT) Assigned -1; Weight 0.5

continued.

Appendix 1: *continued.*

October	Specified the types of permissible options and transactions and tightened the implementation of documentation requirements on banks' clients to prove their underlying transactions Assigned 1; Weight 0.5
November	Reminder to banks of the existing prohibition of outright forward baht sales with delivery dates of less than 2 days for no underlying transaction Assigned -1; Weight 0.25
December	Prohibition against residents' use of foreign exchange for domestic payments. Foreign capital may be brought into the country without restriction but proceeds must be surrendered to authorized banks or deposited in foreign currency accounts with authorized banks in Thailand within 7 days of receipt. Assigned -1; Weight 0.5
2001	
September	Permission for financial institutions to extend direct loans in Thai baht with collateral to nonresident natural persons permitted to work in Thailand. Financial institutions may issue letters of guarantee to nonresidents when there is a stand-by letter of credit from financial institutions abroad. Assigned 1; Weight 0.5
2002	
January	Permission for Thai residents to purchase (without approval) immovable assets for residential purposes up to the equivalent of $5 million Assigned 1; Weight 0.5
	Permission for Thai residents to purchase foreign shares under employee stock option plans without BOT approval up to the equivalent of $100,000 Assigned -1; Weight 0.5
2003	
September	Limiting the amount of Thai baht that onshore financial institutions can borrow short-term from nonresidents without underlying trade or investment to no more than B50 million. The measures were extended to tighten a loophole. The measure covers direct borrowing, issuance of short-term debt instruments to nonresidents, buying of foreign exchange/Thai baht outright forward, sell/buy foreign exchange/Thai baht swap, and other derivative transactions. Assigned -1; Weight 1.0
October	Requirement for all onshore financial institutions to limit the total daily outstanding balance of nonresident baht accounts to no more than B300 million per nonresident. BOT prohibits financial institutions from paying interests on such current and savings accounts except for fixed accounts with maturity of at least 6 months. Assigned -1; Weight 1.0
2005	
April	Relaxation of investment in securities abroad by institutional investors (six institutions). In addition to debt securities, the BOT extended the relaxation to include investment units issued by foreign mutual funds (excluding hedge funds) under the supervisory bodies that are members of the International Organization of Securities Commissions, or distributed in the countries whose securities exchanges are members of the World Federation of Exchange (not more than $1.5 billion). Assigned 1; Weight 2.0
December	Increase the amount of Thai direct investment or lending to a business abroad to not exceeding $10 million per year (with BOT approval) Assigned 1; Weight 1.0

continued.

Appendix 1: *continued.*

2006	
April	Relaxation of investment in securities abroad by institutional investors (six institutions). In addition to debt securities, the BOT extended the relaxation to include investment units issued by foreign mutual funds (excluding hedge funds) under the supervisory bodies that are members of the International Organization of Securities Commissions, or distributed in the countries whose securities exchanges are members of the World Federation of Exchange. In addition, securities are issued under the Asian Bond Fund Project of the Executive Meeting of East Asia and Pacific Central Banks not exceeding $2 billion). Assigned 1; Weight 0.5
November	Permission to financial institutions to undertake FX/THB derivatives transactions with nonresidents without approval from the BOT. Permission for transactions that are comparable to providing Thai baht liquidity to nonresidents or borrowings in Thai baht from nonresidents without underlying trade and investment in Thailand in amounts not more than B50 million per group of nonresidents. Such rules on the borrowings without underlying trade and investment in Thailand shall be applied with a maturity of not more than 3 months. Assigned 1; Weight 0.5
December	Requirement to deposit 30% of foreign exchange with BOT as unremunerated reserve requirement (URR) for all foreign transactions, except those related to trade in goods and services, repatriation of investment abroad by residents, and foreign direct investment. The full amount of capital will be refunded after funds have remained within Thailand for 1 year. If funds are repatriated earlier, only two thirds of the amount will be refunded. Assigned -1; Weight 2.0
	Permission for financial institutions' borrowings of Thai baht from nonresidents through sell–buy swap transactions when there are no underlying trades and investments in Thailand for a maturity longer than 6 months Assigned 1; Weight 0.5
2007	
January	Increase in the amount of Thai direct investment or lending to a business abroad (affiliated companies) from a maximum of $10 million per year to $50 million per year (with BOT approval) Assigned 1; Weight 1.5
	Permission for a Thai juristic person to invest in or lend to a business abroad (holding shares or having an ownership of the Thai juristic person not less than 10%) not exceeding 20 million per person per year. Assigned 1; Weight 1.0
	Permission to seven institutional investors (Government Pension Fund, Social Security Fund, provident funds, mutual funds excluding private funds, securities companies, insurance companies, and specialized financial institutions) to invest in securities issued abroad by Thai juristic persons (mostly debt securities) without limit. For investment in foreign securities not issued by Thai juristic persons, such investors are allowed to invest up to the outstanding balances of $50 million but the investment must not exceed the limit set by their regulators, board of directors, or management of each institutional investor. Assigned 1; Weight 0.5
	Provision of additional option for a particular type of inflows to either withhold the URR or to hedge against FX risks Assigned 1; Weight 0.5
	Permission for foreign currencies received from abroad without future foreign exchange obligations to be deposited in the foreign currency accounts with an outstanding balance of all accounts not exceeding $50,000 for an individual or $2 million for a juristic person. The maximum outstanding balance of the deposit with obligations remains at $500,000 for an individual and $50 million for a juristic person. Assigned -1; Weight 2.0

continued.

Appendix 1: *continued.*

July	Permission for companies registered in the SET to buy foreign exchange for their investment abroad with the limit of USD100 million per year Assigned 1; Weight 2.0
	Relaxation of the regulation on foreign portfolio investment by institutional investors, allowing them to invest in the form of deposits with financial institutions abroad without seeking approval from the central bank Assigned 1; Weight 1.0
	Relaxation of the regulation on foreign currencies received from abroad by increasing the amount of total outstanding balance. For foreign currency accounts with future foreign exchange obligations, the total outstanding balance for all foreign currency accounts can be up to the obligations within the next 12 months but not exceeding $1 million for an individual or $100 million for a juristic person. For foreign currency accounts with no future foreign exchange obligations, the total outstanding balance for all foreign currency accounts can be up to USD100,000 for an individual or USD5 million for a juristic person. Assigned 1; Weight 0.5
November	Reduction in the foreign ownership for financial institutions to 49% from 100%. Assigned -1; Weight 0.5
December	Rise in the limit and expansion of the scope for investment and lending abroad for Thai companies as follows: (i) A parent company in Thailand can transfer funds for the purpose of direct investment in subsidiaries and affiliated companies abroad in an aggregate amount not exceeding $10 million per year (ii) A subsidiary company in Thailand can transfer funds for the purpose of direct investment in, or lending to, a parent company abroad, subsidiaries, and affiliated companies of the parent company abroad, in an aggregate amount not exceeding $100 million per year. Assigned 1; Weight 2.0
	Increase in the limit for purchase of properties abroad from $1 million to $5 million. Assigned 1; Weight 0.5
	Exemption of foreign currency borrowings, in an amount not exceeding $1 million, as specified on the relevant agreement or contract, and having a maturity of at least 1 year, by Thai juristic persons from both the URR and the fully hedged requirement. Assigned 1; Weight 0.5
	Rise in the maximum limit of Thai residents' foreign currency deposits, and permission to Thai residents to deposit foreign currencies originated abroad without proof of evidence of future foreign exchange obligations. For foreign currency accounts with funds originating from domestic sources, total outstanding balances of deposits without future foreign exchange obligations are limited to $100,000 for an individual or $300,000 for a juristic person. Assigned 1; Weight 0.5
2008	
February	Increase in the foreign investment limit approval of the SEC to $30 billion for allocation to securities companies, mutual fund companies, and individual investors (through investments with private funds or securities companies) Assigned 1; Weight 1.5
	Lifting of URR measures Assigned 1; Weight 2.0
	Revision of the rule for domestic financial institutions' baht borrowings from nonresidents, reducing the limit for transactions with no underlying trade or investment for all maturities to no more than B10 million outstanding balance per group of nonresidents so as to limit channels of speculation. Revision of the rules regarding the provision of Thai baht liquidity by domestic financial institutions to nonresidents by expanding each institution's limits for transactions with no underlying trade or investment to no more than B300 million outstanding balance per group. Assigned -1; Weight 1.0

continued.

Appendix 1: *continued.*

2009	
August	Increase in types of institutional investors, allowing juristic persons that are registered under Thai law with assets of at least B5 billion and whose principal businesses are in manufacturing, trading, or services to invest in securities abroad not exceeding $50 million per entity. Previously, only Government Pension Funds, Social Security Fund, provident funds, mutual funds, securities companies, insurance companies, and specialized financial institutions are allowed. Assigned 1; Weight 0.5
2010	
February	Increase in the amount limit for purchase of immovable properties abroad from $5 million per year to $10 million per year. Assigned 1; Weight 1.0
	Permission for Thai companies to lend to non-affiliated companies abroad, which previously required approval, up to $50 million. Increase in the outstanding balance limits of foreign currency accounts deposited with funds exchanged from Thai baht Assigned 1; Weight 0.5
	Permission for Thai companies to freely invest abroad in the form of direct investment. Increase in the quota of approvals for portfolio investment granted by the Securities and Exchange Commission from $30 billion to $50 billion for allocation to investors under its supervision. Assigned 1; Weight 0.5

Sources: For Malaysia: Johnson et al. (2006) and Bank Negara Malaysia website, available: www.bnm.gov.my/index.php?ch=8, downloaded July 2010. For Thailand: Bank of Thailand website, available: www.bot.or.th, downloaded July 2010 and Jongwanich (2006).

Appendix 2: Capital Restrictions/Relaxation, Real Exchange Rate, and Manufacturing Production Index

	Net Capital Inflows		Net Capital Outflows	
	DLOG(REER)	DLOG(MPI)	DLOG(REER)	DLOG(MPI)
D(TIF_A_SA(-1))	-0.002	-0.084	-0.029	0.110
	-0.060	-0.109	-0.035	-0.059
	[-0.03504]	[-0.77191]	[-0.83081]	[1.86835]*
DLOG(REER(-1))	0.193	-0.535	0.084	-0.466
	-0.174	-0.316	-0.151	-0.250
	[1.10919]***	[-1.69335]*	[0.55669]	[-1.86038]*
DLOG(MPI(-1))	0.117	-0.026	0.070	-0.147
	-0.081	-0.148	-0.075	-0.125
	[1.43819]**	[-0.17239]	[0.92564]	[-1.17788]***
D(RINTEREST(-1))	0.007	-0.009	0.009	-0.009
	-0.004	-0.007	-0.004	-0.006
	[1.81575]*	[-1.26060]***	[2.68009]*	[-1.55360]*
D(TFC(-1))	0.061	-0.063	-0.169	0.430
	-0.131	-0.238	-0.158	-0.262
	[0.46960]	[-0.26605]	[-1.06990]	[1.63871]*
C	-0.001	0.011	0.024	-0.101
	-0.004	-0.008	-0.037	-0.061
	[-0.13973]	[1.37553]***	[0.66103]	[-1.66227]*
DLOG(RGDPG3)	-0.032	0.872	0.055	1.198
	-0.217	-0.395	-0.233	-0.386
	[-0.14885]	[2.20588]*	[0.23837]	[3.10275]*
DLOG(SHAREUSA)	0.082	0.185	0.086	0.121
	-0.066	-0.119	-0.065	-0.108
	[1.24265]***	[1.55258]*	[1.32476]***	[1.11606]***
R-squared	0.298	0.426	0.484	0.645
Adj. R-squared	0.111	0.272	0.281	0.505
Sum sq. resids	0.012	0.040	0.010	0.026
S.E. equation	0.020	0.036	0.018	0.031
F-statistic	1.595	2.778	2.385	4.623
Log likelihood	102.247	78.965	110.012	89.727
Akaike AIC	-4.782	-3.588	-4.901	-3.886
Schwarz SC	-4.398	-3.204	-4.394	-3.380
Mean dependent	0.002	0.020	0.002	0.020
S.D. dependent	0.021	0.043	0.022	0.044

Source: Authors' calcuation.

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About the Paper

Juthathip Jongwanich, Maria Socorro Gochoco-Bautista, and Jong-Wha Lee examine the impact of capital controls in Malaysia and Thailand during the period 2000–2010 using newly constructed capital control indexes. The results show that capital restrictions introduced in Thailand have no significant effect on inflows, but liberalization of outflows is effective in both Malaysia and Thailand. In addition, capital controls is found to have no impact on real exchange rates in both countries.

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